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Supreme Court of the United States

OCTOBER TERM, 1930.

No. 48.

AMERICAN FRUIT GROWERS, INC.,
Petitioner,

vs.

BROGDEX COMPANY,
Respondent.

BRIEF FOR PETITIONER.

On Writ of Certiorari to the United States Circuit Court of Appeals for the Third Circuit.

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SUBJECT MATTER INDEX.

		PAGE
I.	The Opinions of the Courts Below	1
II.	Jurisdiction	2
III.	Statement of the Case	2
	Practical Effect of Decree	3
	Prime Question for Review	3
	Standard Packing-House Practices	5
	Primary Conclusions of the Courts Below	6
	Secondary Conclusion	7
	Limitation Placed on Finding of Prior Knowledge and Use	7
	Nature of the Public Interest in This Case	8
IV.	Summary of Argument	9
V.	Argument	13
	The Patent Is for Treatment of Fruits and Vegetables Against Decay	13
	The Patent Recites Treatment of Citrus Fruit as Illustrative	14
	Effect of Decree	14
	The Patent Calls for No Change in Packing House Practices	15
	Careful Handling an Adequate Preventive of Blue Mold—the Enemy of Wounded Oranges	16
	Sound Oranges Subject to Many Decay Producing Organisms and Diseases	16
	The Nature of the Alleged Invention	18
	Plaintiff's "Specific Mode of Application"	20
	Defendant's Practice	22

PAGE

Prior Patents and Publications Relating to the Use of Borax and Boric Acid as Food Preservatives 24

The Particular Toxicity of Borax and Boric Acid to Molds, with Special Reference to the Penicillia 34

All of the Foregoing Showing Ignored by the Circuit Court of Appeals 39

It Is Not Patentable to Apply an Old Process to a New Subject 43

If Such Extension of Use to Oranges Were Invention, Nevertheless the Patent Falls Because of Prior Uses of Borax for Prevention of Decay of Oranges 51

- The Bishop Use 53
- The Pond Use 56
- The Thompson Use 58
- The Chilton Use 59
- The Barnes Use 59
- The Morgan Use 60
- The Davis Use 60
- The Howard Use 61
- The Palmer Use 61

The Foregoing Evidence of Prior Application of Claimed Process to Oranges Given Qualified Acceptance by the Courts with No Finding to Indicate the Courts' Line of Demarcation Between What Was Accepted and What Was Rejected 62

The Evidence of Prior Uses Is Sufficient in Quality and Amount Under the Decisions 63

PAGE

Early Work of the Department of Agriculture in the Treatment of Oranges with Boric Acid to Prevent Blue Mold Decay 69

Courts Found Claimed Process Inherently Wanting in Invention but This Conclusion Barred Collaterally 71

Decisions of Courts Below Based on Unwarranted Assumptions 72

Unwarranted Assumption of Long-Felt Need and Search for Remedy 74

Plaintiff's First Grade of Available Evidence Not Used 74

Plaintiff's Publications Showed Antithesis of Search 75

Plaintiff's Leading Expert Negatived Theory of Search 76

Circuit Court of Appeals Thirteen Exemplars Had No Connection with Search 79

Unwarranted Assumption of Commercial Success 88

The Period of the Brogden and Trowbridge Patent Shows No Substantial Departure from What Went Before 92

Theory of Invention Finds No Substantial Support in Any Showing of Long-Continued Expenditure of Effort or Money in the Making Up and Developing of the Process 98

Commercial Success Test of Invention Only in Doubtful Cases 99

PAGE

Unwarranted Assumption As to Why the Use of Borax As a Preservative to Be Used on Oranges Was Not Earlier Endorsed by the Department of Agriculture 103

State of the Public Mind and Attitude of Authority with Regard to the Use of Preservatives on Articles of Food During the Period of Blue Mold Investigations Which Resulted in Adoption of Careful Handling Practices as Best Means of Prevention 105

The Article Claims 115

The Article Claims Are Invalid Under the Doctrine of Holland Co. vs. Perkins Glue Co., 277 U. S., 245 120

VI. Conclusion 124

APPENDIX.

Analysis of Plaintiff's Exhibits as Bearing on Efforts to Control Blue Mold 129

Analysis of Defendant's Exhibits 153

Opinion of Judge Dickinson Sur Motion for Preliminary Injunction in Brogdex Company vs. California Fruit Growers Exchange 158

TABLE OF CASES CITED.

PAGES

Anheuser-Busch Brewing Assoc. vs. U. S., 207 U. S., 556 117
Arlington Mfg. Co. vs. Celluloid Co., 97 F., 91 (C. C. A., 3) 46
Armstrong Seatag Corp. vs. Smith's Island Oyster Co., 254 F., 821 (C. C. A., 4) 119
Boston Pencil Pointer Co. vs. Automatic Pencil Sharpener Co., 276 F., 910 (C. C. A., 2) 102
Brogdex Co. vs. California Fruit Growers Exchange (E. D., Pa.) (unreported, see Appendix, p. 158) 41, 121
Brown, et al., vs. Piper, 91 U. S., 37 ..... 44, 45
Carlton vs. Bokee, 17 Wall., 463 121
Case vs. Cressy, 18 R. P. C., 419 (1901) 43
David Belais, Inc., vs. Goldsmith, etc., Co., 10 F. (2d), 673 (C. C. A., 2) 102
Deering vs. Winona, etc., 155 U. S., 286 66
DeLamar vs. DeLamar Min. Co., Ltd., 117 F., 240 (C. C. A., 9) 48
Duer vs. Corbin Cabinet Lock Co., 149 U. S., 216 100
First National Bank vs. Stewart, 114 U. S., 224 106
Grant vs. Walter, 148 U. S., 547 100
Hansen vs. Slick, 230 F., 627 (C. C. A., 3) 48
Hartranft vs. Wiegmann, et al., 121 U. S., 609 119
Hewes, et al., vs. S. Deiches & Co., 24 F. (2d), 503 (C. C. A., 7) 102
Hipolite Egg Co. vs. U. S., 220 U. S., 45 114
Holland, etc., Co. vs. Perkins Glue Co., 277 U. S., 245 120-124
Incandescent Lamp Patent, 159 U. S., 465 123
Lovell Mfg. Co. vs. Cary, 147 U. S., 623 ..... 46, 100
McClain vs. Ortmayer, 141 U. S., 419 100
Morgan & Co. vs. Windover & Co., 7 R. P. C., 131 69

PAGES

National Tube Co. vs. Spang, et al., 135 F., 351 (C. C. A., 3) 48
Penn. R. R. Co. vs. Locomotive, etc., Co., 110 U. S., 490 46
Price vs. Illinois, 238 U. S., 446 114
Republic Rubber Co. vs. G. & J. Tire Co., 212 F., 170 (C. C. A., 7) 101
Reynolds vs. Standard Paint Co., 68 F., 483 (C. C. A., 3) 47
Riter-Conley Mfg. Co. vs. Aiken, 203 F., 699 (C. C. A., 3) 115, 117
Rodwell Sign Co. vs. F. Tuchfarber Co., 127 F., 138 (C. C. A., 6) 68
Seabury vs. Am Ende, 152 U. S., 561 ..... 126, 127
Sewell vs. Jones, 91 U. S., 171 49
Sipp Electric & Machine Co. vs. Atwood-Morrison Co., 142 F., 149 (C. C. A., 3) 67
Thropp's Sons Co. vs. Seiberling, 264 U. S., 320 101
Turner vs. Lauter Piano Co., 248 F., 930 (C. C. A., 3) 101
Zinsser, et al., vs. Krueger, 48 F., 296 (C. C. A., 3) 47
U. S. Compiled Statues, 1918, ch. 3915, Sec. 7 25

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BRIEF FOR PETITIONER.

(Defendant Below.)

I.

THE OPINIONS OF THE COURTS BELOW.

The opinion of the Circuit Court of Appeals for the Third Circuit to be reviewed in this proceeding is reported in 35 Fed. (2d), 106 (R., I, 571, et seq.). This opinion of the Circuit Court of Appeals affirmed the decree of the District Court for the District of Delaware, the opinion of that Court being reported in 21 Fed. (2d), 110 (R., I, 16).

II.

JURISDICTION.

This case comes before this Court on a writ of certiorari to the Circuit Court of Appeals for the Third Circuit granted March 17, 1930 (R., II, 1615), as provided by Judicial Code, Sec. 40 (a) as amended by Act of February 13, 1925 (U. S. Code, Title 28, Sec. 347).

III.

STATEMENT OF THE CASE.

Pursuant to certiorari granted on the petition of the American Fruit Growers, Inc., defendant in the District Court and appellant in the Circuit Court of Appeals, there is here for review a transcript of the proceedings originally instituted by the Brogdex Company as complainant in equity in the United States Court for the District of Delaware, wherein on September 26, 1927, after trial in open Court before Judge Morris, from January 31, 1927, through February 7, 1927, and argument April 8, 1927, a decree was entered September 26, 1927, adjudging claims 1, 2, 3, 4, 5, 6, 7, 9, 14, 15, 16, 17, 18, 23, 24, 25 and 26, of Brogden and Trowbridge Patent No. 1,529,461, issued March 10, 1925, valid and infringed, and ordering an injunction and accounting; together with a transcript of the proceedings on appeal from said decree in the United States Circuit Court of Appeals for the Third Circuit wherein after argument a decree was entered October 7, 1929, affirming said decree of the District Court.

The action was by bill in equity for infringement of patent. Claims 1, 2, 3, 4, 5, 6, 7, 9, 14, 15, 16, 17 and 18 adjudged valid, are process claims all essentially the

same—each covering the process of subjecting fruit to the action of an aqueous solution of borax or its substantial equivalent, boric acid or alkali metal borate. Claims 23, 24, 25 and 26, the remaining claims adjudged valid are article claims each similarily covering a natural orange or other fruit bearing in or on its rind a very small amount of borax or boric acid radical. The defences set up in the answer were invalidity because of prior patents, printed publications, public uses, public knowledge and lack of invention; also non-infringement.

The infringement set up in this particular case was the use of a borax solution as an antiseptic, upon oranges—one of the vegetable substances covered by the patent—for the prevention or retardation of the growth of penicillium, a saprophytic mold, which is the familiar blue mold so often seen on organic substances, vegetable and animal.

Practical Effect of Decree.

Since the sustained process claims cover the general use on fruit of any strength of borax in solution that may tend to resist blue mold or any kindred rot and decay organisms and diseases, the effect of the decree is to enjoin the American Fruit Growers, Inc., the petitioner from using borax in the water in which it soaks and washes its oranges in the usual course of packing house practice, preparatory to wrapping and packing them. And the decree is further effective to prohibit the sale by the defendant of any oranges bearing on the rind borax or boric acid radical even though in amounts so minute as to be ascertainable only by chemical analysis.

Prime Question for Review.

Therefore the prime question here for review is whether or not it is lawful for an unlicensed person to

wash, dip or soak any fruit or vegetable in water containing any substantial amount of borax.

This statement does not ignore the opinion of the Circuit Court of Appeals that the invention "is not the mere use of borax or boric acid, nor of the use of that force in a specific manner." That Court saw the invention as a process limited to the idea of applying borax in solution to any breaks found in the rind of an orange to render it to some degree immune to the growth of blue mold, which is known not to attack the sound rind (R., I, 577). This view is suggested in a statement of the patent specification that "blue mold does not ordinarily attack perfectly sound fruit that is free from bruises, cuts, thorn-pricks or punctures" but that "the slightest surface cut or scratch affords a point of attack by providing lodgment for blue mold spores." But the Court's theory leaves the real question for review as above stated, since nowhere in the patent is there any plan or suggestion for sorting out the injured oranges and treating their wounds. The claimed procedure is for dipping or soaking or washing all oranges in water carrying with it a substantial but undefined amount of borax. Hence if the decree stands, one used to or desirous of using in his orange packing house this common water softener, cleanser, detergent and antiseptic can find no comfort in the fact that the Court saw invention only in the idea of applying the borax solution to the broken places in the rind of a cut, scratched, punctured or otherwise wounded orange.

It is to be noted that while "blue mold" is a saprophyte, dependent for growth upon dead tissues, oranges and other fruits are subject to many parasites and diseases that attack the sound skin or rind; and that the patent specifies that both in the specifications and in the claims the term "blue mold" is to be taken as generic and not restrictive and shall be read to include all dis-

eases and decay producing organisms to which fruits may be susceptible (R., I, 597).

Standard Packing House Practices.

The evidence shows without dispute that for many years it has been the almost universal practice to soak and wash oranges in an effort to remove all dirt, scale, smut, spores and other decay-producing organisms and send out each tissue-wrapped orange in the freshest and best condition possible. The record shows frequent recitals with respect to the customary use of well-known antiseptics such as caustic soda, borax, blue stone, permanganate of potash, washing powders and various kinds of soaps. And the specification of the patent in suit advises that as borax has excellent cleansing or detergent properties, its application "may be effected as a part of or in conjunction with the usual washing operation to which the fruit is initially subjected in its handling according to modern packing house methods" (R., I, 5).

In the plaintiff's evidence is found the statement that twenty-nine kinds of scale attack citrus fruit (R., II, 1170) in addition to such pests or diseases as blue mold, stem-end rot, melanose, anthracnose, brown rot, black rot, nail-head rust, Diplodia rot, and other causes of decay (R., II, 864, 1080, 1186, 1201).

An informing glimpse of what the industry saw with respect to the necessity of using something more than pure water in the preparation of its fruit for the market in the face of this legion of destructive organisms, is afforded in the testimony of one of the plaintiff's orange-packing experts, Allan H. McIntyre, who said:

> "In my experience washing powder was considered almost as necessary as the water itself to clean dirty fruit" (R., I, 317).

Primary Conclusions of the Courts Below.

In addition to abundant evidence of prior like uses of borax as a food preservative, with particular reference to inhibiting of molds, the defendant offered much evidence of the use of borax in solution as applied to oranges in preparation for market. The defendant offered the disclosures of many patents directed toward the use of borax for the prevention of decay (R., II, 1538-1603); introduced evidence of two years use of boracic acid in California prior to 1906 for prevention of decay of oranges under one patent (R., I, 177; R., II, 1473) and introduced evidence of similar practices in two other California packing houses and six Florida packing houses. On this proof the District Court definitely found as follows:

> "That borax was used in the preparation of citrus fruit for market by several persons prior to the date of the invention in suit cannot, I think be seriously questioned" (R., I, 19).

(*See limitation stated below.*)

Complementary to this finding is the following further finding of the District Court:

> "That borax and boric acid have long been known to possess antiseptic properties and long been used as preservatives of animal and vegetable matter is here established beyond question. They were so used both dry and in solution. The solutions were both hot and cold. The use of a hot solution of boric acid or its salts to prevent the growth of fungi or mold upon cured meats by immersing or dipping them into the solution was disclosed as early as 1879. As early as 1888 boric acid and its salts were used in packing material such as sawdust, chaff and shavings for the preservation of 'all kinds of fresh fruits

during storage or their transportation to near or distant markets.' It was even found that many species of penicillium molds were more or less affected by boric acid and its salts'' (R., I, 16-17).

Whereupon the District Court concluded, that viewed retrospectively ''the claimed process would seem to be wanting in invention over the disclosures of the prior art.''

Secondary Conclusion.

But the Court said that this conclusion was met by a *bar* in the form of a long, unsuccessful search for a remedy (R., I, 18). The views of the District Court were adopted by the Circuit Court of Appeals (R., I, 18).

If the fact of search be deemed material it is to be decided whether there is evidence to support it. The plaintiff called thirty-one witnesses, eighteen of them orange packing experts, and none of them were examined on this subject. The only evidence pointed to by the Court in this connection was certain hearsay, contained in publications offered by the plaintiff for the limited purpose of showing ''what the art was being taught.'' It is to be decided whether these publications can be taken as evidence of search, and if so whether they go to show search, or whether, on the contrary thereof they show the antithesis of search.

Limitation Placed on Finding of Prior Knowledge and Use.

The District Court qualified its finding that borax had been used by several persons in the preparation of citrus fruit for market prior to the date of the invention in suit, with the reservation that the defendant's evidence did

not establish with sufficient certainty the fact that any of these uses were for the purpose of preventing decay *and* in such manner as effectively to prevent decay. The Circuit Court of Appeals based its decision on the same conclusion.

If either or both elements of this duplex conclusion be material in view of the Court's primary conclusion of non-invention then it is for decision whether this conclusion is so connected with and supported by evidentiary facts, as to be entitled to any weight.

Nature of the Public Interest in this Case.

The right to the free use of such an important mild antiseptic and preservative as borax within its accustomed field of use is a matter of grave importance, regardless of the degree of importance that ultimately might be found to appertain to that right with respect to the application of borax to oranges, which is the thing immediately involved in the decree in this case.

But in addition to this subject matter it has been shown that public interest in this case has been aroused primarily because of the far-reaching nature of the apparently novel principles of patent law that have been laid down in the opinions below.

As the record shows, the United States, upon the petition for certiorari in this case, filed a memorandum as Amicus Curiae based upon a letter from the Acting Secretary of Agriculture to the Attorney General, which is attached to the memorandum submitted on the part of the United States, and which reads in part as follows:

> "Specialists in this Department entertain the view that the decision of the Circuit Court of Appeals in the case referred to has an unusual and important bearing on certain phases of investigative work performed by the Department, and for this reason it

also has a bearing on the interests of the agricultural public. As you well know, one of the primary functions of this Department is to inaugurate and carry on varied investigations in the cultivation, production and marketing of agricultural products, with a view to developing new and better methods for their production and handling, and for controlling and eradicating diseases and pests that attack them, and to impart useful information obtained in this way, by bulletins or other means, to the public.

* * * * * * *

Frequently these papers disclose the adaptability of old well-known chemical products to control or eradicate plant pests and diseases. Many agriculturists adopt and follow the processes and methods set forth in these publications, as they feel they may safely do so because the information is brought to them from official sources. While it has been the practice to have our employees developing improved machines or new compounds or new formulae apply for public service patents, thus dedicating their inventions to the use of the Government and the public without requiring the payment of royalties by the users thereof, employees of the Department have not, however, until very recently considered it advisable or necessary, in order to protect interests of the general public, to apply for public service patents upon the adaptation of old machines to new purposes, slight modification of formulae, or the discovery that well-known chemicals had unusual value and specific uses, somewhat widening the general purpose or purposes for which they had formerly been considered."

IV. SUMMARY OF ARGUMENT.

The Court erred in entering a decree, the effect of which for three years has been to prevent the petitioner, the defendant below, from using borax in the washing tanks of its orange packing houses.

While the patent is one for the general application of borax to fruit and vegetables of all kinds, for its effect on any source of decay to which they may be susceptible (and the treatment of citrus fruit is referred to in the patent merely as illustrative)—since the complaint in this case was that the defendant used borax in the orange washing tanks of some of its packing houses with a view to the retarding of the growth of blue mold, the Court viewed the patent as though limited to that particular use, and as designed to prevent blue mold which is a saprophyte from gaining access to oranges through rind lesions resulting from injuries.

So far as relates to blue mold the citrus industry was absorbed with the logical practice of avoiding blue mold by avoiding injuries. But oranges are subject to a great number of other decay-producing organisms and diseases and usually come from the groves bearing white fly smut, scale, dirt, germs of diseases and spores of fungi, parasitic and saprophytic. Therefore it long has been customary to use various soaps, powders and other cleansing and detergent agents and antiseptics in the wash water.

The use of borax as a preservative of foodstuffs and a preventive of mold long has been a matter of such notoriety that the Court might well take judicial notice of it as well as notice of the tendency of the Pure Food and Drugs Law of 1906 against the adopting of the practice of adding borax to oranges as a preservative, which is the essence of the claimed process.

The Court erred in looking on the claimed process as specific and novel rather than at most a mere extension of a well known general practice. The defendant's alleged infringement consisted in the use of borax in its wash water which was undertaken in a part of its packing houses, at the suggestion of the Department of Agriculture.

This very practice was disclosed in many of the prior patents and publications; and the inhibiting force of borax against the growth of blue mold was shown to have been long well known.

It is not patentable to apply an old process to a new subject; and even if it were, the claimed use of borax on oranges would fall, upon consideration of that same use under the early Bishop patent and the same proven use in eight other orange packing houses in two States.

The Court found that borax had been used in preparing oranges for the market, but erroneously concluded that it had not been used to inhibit decay. Error appears here because the Bishop patent expressly specified the preventing of decay and that purpose was shown in the case of the eight other packing establishments shown to have used borax in the orange washing tanks; and the District Court itself found that for many years borax had been known to possess antiseptic properties; had been known to affect penicillium molds; and long had been used as preservatives of animal and vegetable matter, being used both dry and in solution, with solutions both hot and cold, and used "to prevent the growth of fungi or mold upon cured meats by immersing or dipping them into the solution * * * as early as 1879"; and that as early as 1888 boric acid and its salts had been used to preserve fresh fruits during storage and in transportation, by impregnation of packing material such as sawdust.

In 1905 the Department of Agriculture pointed out the feasibility of the exact mode of use of borax and boric acid which is claimed in the patent in suit.

The Court found the claimed process wanting in invention over these prior disclosures; but contrary to the controlling rule of law, allowed collateral assumptions to "bar" that conclusion. It was error to inject doubt from without the four corners of the patent. But in

any event the collateral assumptions which controlled the decision of both Courts below were without warrant. These assumptions were, one of long and unsuccessful search, one of commercial success, and the last an assumption that the Department of Agriculture in 1905 tried the use of borax and failed.

The patent being inherently bad, as the Court found, a collateral assumption to support the patent is to be proved affirmatively. Plaintiff called a large number of citrus fruit experts as witnesses but failed to examine any of them on the subject of search. Hence a presumption that they would have negatived the claim of search. Plaintiff's leading expert Hart, testified squarely that under the standard "careful handling" practice no other preventive was needed.

Neither Court pointed to evidence to support the claim of search except that the Circuit Court of Appeals named thirteen men as exemplars of the conduct of search. Eleven of them did not testify at all and are not mentioned in connection with search. Seven of the eleven were Department of Agriculture experts working intensively and exclusively on the careful handling program. Journalism and other things remote from search occupied the other four. Of the two who testified in this case, one is the witness above mentioned who distinctly negatived any thought of search and any need for search. The other made no mention of search.

Evidence of commercial success fails for various reasons, one being that in practice the plaintiff coupled the use of borax with the use of a subsequent antiseptic waxy coating for which much was claimed, so that the adoption and success of one cannot be distinguished from the adoption and success of the other.

Plaintiff's high pressure campaign for adoption of its patented processes has had no bearing upon the continued reliance upon avoiding of injuries as the essential

method for insuring that fruit will reach the market and go into consumption substantially free from decay, as for many years has been visibly notable.

The record shows that the Department of Agriculture borax demonstrations in 1905 were successful and that the failure to recommend the added borax as a preservative coating of oranges is explained by facts of great notoriety with respect to the agitations of that day and later, against the adding of preservatives to foodstuffs. Concurring was the fact that the use of a supposed preservative would make more difficult the securing of general adherence to "careful handling," of the kind that would send the fruit to the market free from even the slightest injuries, the thing upon which the Department of Agriculture has concentrated ever since 1905.

The Courts erred in sustaining the article claims, since a fresh orange is none the less a fresh orange because it may have on its rind a trace of borax, particularly since none but a chemist could find the borax and then would not know whether it came from use of the claimed process, or came from soil, water or spray, during growth. And if this reason were not enough, it would appear further that this change from a fresh orange to an article of manufacture could not be effected by a specification as vague as that of the patent, which specifies the article as an orange carrying borax in an amount that is "very small but sufficient to render the fruit resistant to blue mold decay."

V. ARGUMENT.

The Patent Is For Treatment of Fruits and Vegetables Against Decay.

The patent sued upon in this case claims a monopoly on the application of a solution of borax or boric acid to

fresh fruits and vegetables for the retarding of decay and also a monopoly on the sale of fresh fruits and vegetables which carry a borax or boric acid residue after such application.

The Patent Recites Treatment of Citrus Fruit as Illustrative.

The patent describes the customary treatment of citrus fruit in the packing house "for the sake of a concrete example whereby the principles of the invention may be illustrated and explained" (R., I, 587). And as it happens the infringement charged in this case was that in 1925 and 1926 the defendant below, the American Fruit Growers, Incorporated, used borax in the tanks in several of its packing houses in which it washed and disinfected its oranges in preparation for marketing, and that the defendant sold oranges that carried with them after such washing and disinfecting, minute quantities of borax as shown by chemical analysis (R., I, 99, 111).

Effect of Decree.

The effect of the decree, which sustains thirteen process claims of the patent and four article claims, is to enjoin the American Fruit Growers, Incorporated, from using borax or any form of the boric acid radical in the water in which it cleanses and purifies any of its fruits and vegetables, and from selling any fruits or vegetables that may carry with them into the market traces of borax or its substantial equivalent (R., I, 19, 597).

Under this decree the defendant has been required for three years to wash and so far as desired, disinfect its oranges without the aid of this commonly used water softener, cleanser and antiseptic,—although the Courts below found that borax long had been in common use

for those purposes in the general field of preparing and preserving foodstuffs, and also had been used by several persons in the preparation of citrus fruit for the market, prior to the date of the patent in suit (supra).

Scientific authorities say that extremely low concentrations of borax have a distinctly inhibiting effect on penicillium (blue mold) (infra, p. 24).

The Patent Calls for No Change in Packing House Practices.

The patent itself undertakes to portray in a general way the prior orange packing-house art and specifies that under the claimed process borax can be added to the wash water "as a part of or in conjunction with the usual washing operation to which the fruit is initially subjected in its handling according to modern packing house methods," to wit: the borax "may be added to the wash water in the usual soaking tank into which the fruit is dumped from the field boxes as it comes from the groves." In the same connection the patent shows how well the claimed process will fit into the common packing house practice by pointing out that the borax has "excellent cleansing or detergent properties" (R., I, 590, top).

The patent refers further to the customary washing and scrubbing of the orange (R., I, 587); and the plaintiff's own evidence throughout shows that for many years it had been customary to use various cleansing and disinfecting agents in the wash water, selected from time to time according to the judgment and experience of the individual packing house operator and the particular kinds of decay-producing organisms and diseases most prevalent at the time.

Both the District Court and the Circuit Court of Appeals caused the case to turn upon the idea that the washing of the oranges in water containing borax results in

leaving a borax residue in any cuts or other wounds that have broken the rind of the orange, the point of this being that it has been well established and is conceded that this "blue mold" is a saprophyte which depends for sustenance on dead or dying tissues and therefore can not grow upon the sound, healthy rind of an orange, and can cause decay only by finding growth in rind lesions.

Careful Handling An Adequate Preventive of Blue Mold—the Enemy of Wounded Oranges.

The fact is that up to the time of the propaganda of the Brogdex Company for the use of borax which that company put out originally as a patented composition called "Brogdite" the industry was led to be absorbed (and still is absorbed) in a most remarkable way and to a most remarkable degree in the developing and carrying on of elaborately worked out and standardized methods and means of handling the oranges to keep them from injury, as was found and universally agreed to be a logical and commercially feasible way of avoiding the attacks of blue mold, which is the most common cause of decay of foodstuffs, including fresh fruits and vegetables. The plaintiff devoted some eight hundred and fifty pages of publications to show how continuously these careful handling methods were taught as highly effective, from 1902, when it was well established that blue mold does not attack sound oranges down to the very time of the trial in 1927. For many years we have seen the fresh fruit of the standardized fruit shipping industry what it is, not because of preserving processes but because of the care with which the fruit was grown and handled.

Sound Oranges Subject to Many Decay Producing Organisms and Diseases.

And it was shown by the plaintiff that orange growers and shippers have to reckon with a great number of

other decay producing organisms and diseases, some of them, such as stem end rot being very serious; and that most, if not all, of these other pests and diseases attack sound oranges as well as wounded oranges. Naturally, therefore, the evidence is full of references to the use of various kinds of detergents and disinfectants in the washing process and use of more powerful antiseptics in disinfecting the tanks, field boxes, clothing of workmen and other sources of infection.

It was thoroughly established in this case, and the fact will not be disputed, that for many years borax and boracic acid had been probably the best known and most commonly used antiseptics for the preserving of animal and vegetable matter and specifically for inhibiting the growth of this common blue mold upon foodstuffs and other organic substances.

The District Court found all of this and found as a further fact that a customary manner of use was by immersing or dipping the foodstuffs into a borax or boracic acid solution, hot or cold, or in some cases by applying powdered borax to the surface of the article to be protected against mold (R., I, 16, 17).

Witnesses on both sides referred freely to the use of various kinds of soaps,* washing powders and other sub-

*Both medical literature and the popular literature of sanitation and antisepsis, and horticultural literature as well have frequent references to the prophylactic, bactericidal and germicidal properties of ordinary soaps. Plaintiff's Exhibit 36 (R., II, 1161) is on this subject as bearing on citrus fruit diseases. See also

Davison, F. R., Detoxifying, diffusing germicidal and surface tension depressing properties of soaps, J. Infect. Diseases, *43*: 292-299, Oct. '28;

Eggerth, A. H., Germicidal action of hydroxy soaps, J. Experimental Med. *50*: 299-313, Sept. '29;

Norton, J. F., Soaps in relation to their use for hand washing, J. American Medical Association *75*: 302-305, July 31, '20:

Foreign Letters, Treatment of war wounds by the use of soap, J. A. M. A. *67*: 1954, Dec. 23, '16;

(*Footnote continued on next page.*)

stances with antiseptic qualities such as Blue Stone and permanganate of potash. One of the plaintiff's witnesses who had been a packing house manager in Florida and California remarked that he considered washing powder almost as necessary as the water itself (R., I, 317).

Borax was used by various packing house operators who knew it both as a cleansing and water softening agent, and as an antiseptic useful in inhibiting the growth of mold and consequent decay (infra).

The Nature of the Alleged Invention.

The patent in suit relates to treating fresh fruits or vegetables with borax or boric acid to prevent decay. Emphasis is placed upon the treatment of citrus fruit to prevent blue mold decay, but the claims are not limited to this use. The patentees discuss the scope of their invention in these words (R., I, 586):

> "This invention relates to art of preparing fresh fruit for market; and in particular it relates to processes for the treatment of citrus and other fruits in such manner that the development of molds and the like upon the fruit, and especially the development of blue mold and infection by blue mold spores, is prevented or arrested either wholly or to such large extent as greatly to prolong the marketable life of the fruit beyond what has been possible heretofore; * * *.

(*Footnote continued from previous page.*)

Current Comment, Germicidal properties of soap, J. A. M. A. *87*: 37, July 3, '26;

Walker, J. E., The germicidal properties of chemically pure soaps, J. Infect. Diseases *35*: 557, Dec., '24; also *37*: 181 Aug., '25 and *38*: 127, Feb., '26;

Tilley, F. W., and Schaffer, J. M., Germidical effciency of coconut oil and linseed oil soaps, J. Infect. Dis. *37*: 359, Oct., '25; abst. J. A. M. A. *85*: 1757, Nov. 28, '25.

"The greatest present utility of the invention is in the treatment of citrus fruits such as oranges, grapefruit, lemons, tangerines, etc., also apples and other fruits that are attacked by blue mold or the like. The invention is broad, however, and the term fruit as herein employed is to be understood as not necessarily restricted to fruit in the sense in which the word is usually employed, but is to be understood broadly as including not only fruit proper but also vegetables such as tomatoes or the like, that can be treated to advantage in accordance with the principles of the invention to be hereinafter set forth."

A broad invention; not limited to the treatment of oranges, nor citrus fruit, nor even fruit in the sense in which the word is usually employed. No, this invention is applicable, not only to the treatment of fruit proper, but also to the treatment of vegetables. This is important. It is a clear recognition by the patentees that the problem of arresting decay from mold growth is not peculiar to the citrus industry, but is common to fruit and vegetable growing generally.

The treatment itself is just this—The fruit is immersed in a cold or warm solution of borax or boric acid, permitted to remain until thoroughly wet, then removed, rinsed or not as seems best, and dried. After drying, any deposit of the salt or acid remaining on the fruit is removed by brushing. Either borax or boric (sometimes called boracic) acid may be used; they are equivalents for the purpose, their toxicity being due to the boric acid radical common to both.

Borax and boric acid have been well known and widely used as food preservatives and antiseptics for at least fifty years. Indeed as this Court will doubtless remember, the Pure Food and Drug Law of 1906 was enacted for the very purpose, among others, of regulating, in fact prohibiting, the use of borax and boric acid in food pres-

ervation, which use had at that time become so widespread as to be a menace to public health.

It would seem that the Court might take judicial notice of the old and widespread use of borax and boric acid as preservative for foodstuffs and hold that such use cannot now be patented. We think this Court would be fully justified in so holding. It is not essential, however, to take judicial notice of the old and wide-spread use of borax and boric acid as preservatives—the record amply proves this use, not only as applied to foods generally but as applied to fresh fruits and vegetables specifically.

Plaintiff's "Specific Mode of Application."

The art had for years been dipping foods, including fresh fruits and vegetables into solutions of borax and boric acid for the purpose of preventing decay. Obviously, these patentees cannot get a valid patent covering this very practice.

Conceivably there might be a valid patent covering some specific mode of application—some novel method of making use of this old and well-known property of boric acid. But no novelty of method is set forth in the patent.

Both of the opinions below quote claim 3 as a typical claim:

> "3. In the preparation of fresh fruit for market, the process which comprises subjecting fruit to the action of an aqueous solution of borax, the fluidity, strength and temperature of the treating solution, and the duration of the treatment, being such that exposed rind or skin tissues of the fruit are effectively impregnated with borax and rendered resistant to blue mold decay, while at the same time the fruit is not scalded nor is its freshness or edibility otherwise substantially impaired" (R., I, 598).

And both Courts adopt the following theory of the patent:

> "But their invention, as I understand it, is not the mere use of borax or boric acid, nor of the use of that force in a specific manner, but it consists in the subjection of a specific object to the influence of a specific force acting through a specific mode of application to produce a specific result."

A very specific invention it would seem, involving the application of a *specific* force, upon a *specific* object, acting in a *specific* way, to produce a *specific* result. The borax or boric acid is, of course, the specific force, the same specific force specified in the various prior art patents from which we have quoted, as well as other prior patents of record; the fruit is the specific object, also as specified in the particular citations above referred to; and preservation from decay is the specific result, the same specific result sought for and obtained by the use of borax throughout the world for the last fifty years. Nor does the specific mode of application involve anything novel or out of the ordinary.

That patentees make up a solution of borax in water, dip the fruit in it, allow the fruit to remain two or three minutes or long enough to be thoroughly wet, remove it, and allow it to dry. Could anything be simpler? Isn't that the common and normal method of proceeding? In fact, is there any other way that you can subject the article to the action of a solution of boracic acid as specified in the Spear patent, or dip it in the solution as expressed in the Gahn patent, or wash or bathe it therein, as stated by Bishop? And as for the saturated solution —there is no magic in that; 5% happens to be saturation point at ordinary temperatures and the patent itself allows a range of from 2% to 20% without being even limited to that! (R., I, 591). The defendant in fact used

a solution of less than 2%, yet that too was apparently considered within the "specific mode of application" specified by Judge Morris.

The patent leaves also the detail of temperature to the choice of the operator, between the natural temperature of the water and a degree of heat just short of that which would "scald or cook" the fruit (R., I, 590; Claim 4, R., I, 598).

No, the mode of application is certainly not specific in the sense that its details cannot be varied. Its details *can* be varied within wide limits and are not of vital importance; it is important only that the borax be used effectively. Indeed, the patentees themselves state (R., I, 589):

> "The method of applying the treating solution to the fruit may assume various specifically different forms, the precise details of procedure being not essential to the invention in its broader aspects. However, where it is desirable, as may often be the case, to carry out the process without changing prior practice any more than is strictly necessary, the application of the mold-retarding agent may be effected as a part of or in conjunction with the usual washing operation to which the fruit is initially subjected in its handling according to modern packing house methods, especially as most of the mold-retarding agents herein contemplated also have excellent cleansing or detergent properties" (R., I, 589).

So the patentees have not invented any novel method for using borax, and their patent is simply for the effective use of borax in preventing decay in fresh fruits and vegetables. Is this patentable? Is it an invention? Clearly no. Then why was the patent held valid?

Defendant's Practice.

The defendant owns outright only nine packing houses and of these only four used borax (R., I, 121). It owns an

interest, but not a controlling interest, in six other houses of which four used borax (R., I, 121).

The defendant used borax in these few houses, not because it knew of plaintiff's process, not because it observed with envy the advantages accruing to plaintiff's licensees because of their licenses, but simply because borax was recommended by the Department of Agriculture. Defendant, like others in the industry receives circulars from the Department as a matter of course, and quite naturally and innocently supposes that the Government would not recommend anything which cannot be freely used. Thus, in the present case, defendant received a circular from the Department suggesting the use of a 5% solution of borax to retard decay. This circular was followed by others. In accordance with the custom, the head office embodied these circulars in letters and forwarded them to all packing house managers who were free to make such use of the information as they wished (R., I, 125); see, also, Defendant's Exhibit 3 (R., II, 1458). As a consequence a few houses tried out the Government's recommendations. And this was all before defendant had any intimation that the plaintiff was making claim to the exclusive use of borax for this purpose. An innocent infringement, certainly.

In the spring of 1926, defendant was notified that it was infringing, but the packing season was then practically at an end. In the fall of 1926 before the opening of the season experiments were conducted to discover whether or not satisfactory results might not be had with less than the 5% recommended by the Department and with unheated water. As a result the defendant proved to its own satisfaction that a 1¾% solution of borax in unheated water gave complete satisfaction, and all packing house managers and field men were instructed to use such a solution, if any (Deft.'s Ex. 4, R., II, 1462). The practice for the 1926-27 season was in accordance with

these instructions (R., I, 131). Beginning with the 1927-28 season, defendant has used no borax at all. The actual reduction in the loss from decay which the figures compiled for use in this case disclosed accurately for the first time was too small to warrant accepting the terms proposed by the District Court for vacating the injunction.

Did defendant infringe? Defendant dipped its fruit in a solution of borax to check decay. If this be infringement, why then defendant infringed, just as the patentees of the prior art patents, which we shall now discuss, would infringe should they attempt today to operate under their own old patents, all of which have long since expired. The maxim that that which infringes, if later would anticipate if earlier is applicable here.

Prior Patents and Publications Relating to the Use of Borax and Boric Acid as Food Preservatives.

Our expert, Dr. Alsberg, former Chief of the Bureau of Chemistry, testified (R., I, 269):

> "The first use of borax as a food preservative that I know of, goes back to the latter years of the sixtys of the last century, along '67, '68 and '69. It came to be used as a food preservative. It had of course been known long before that in medicine. It was used for many things in medicine, and had been used as a wound dressing, for its antiseptic qualities long before that time; but it was first used in food that I know of, and its use developed in Sweden, by a man of the name of Gahn, and it developed rapidly and was widely adopted, and by the '90s was so extensively used that it became a matter of very serious consideration from the standpoint

of public health, because it was so widely used in all kinds of foodstuffs."

He then went on to testify (R., I, 269) that about 1900 England passed laws restricting its use in foodstuffs and that Germany thereafter prohibited its use entirely. Then in 1906 our Pure Food Law was enacted and regulations issued under that Act which excluded boric acid from use as a preservative in foodstuffs (R., I, 270; see also U. S. Compiled Statutes of 1918, Act of June 30, 1906, Chapter 3915, Section 7, 34 Statutes at large, 767). Dr. Alsberg testified (R., I, 271):

> "It would be difficult to give a complete list. * * * I can only give those that I can recall. It was widely used as a preservative in various kinds of meats, particularly in smoked and salted meats that were prepared for export. It was used in sausage meat; it was used in milk; it was used on the outside of cheeses or to impregnate the cloth with which certain types of cheese are wrapped; it was commonly used in butter, in cream; for the preservation of oysters and lobsters, shrimp; it was used in wine, beer; it was used in the preservation of fruit juices of various kinds; it was used to help sterilizing process in canning; it was sold as a canning compound to the housewives of the country and was sold for that purpose as late as 1916, 1917 or 1918."

The patents and publications offered in evidence also show the general and widespread knowledge and use of borax and boric acid as antiseptics and food preservatives long prior to the filing of the patent in suit. Three publications and twenty-five patents were offered for this purpose and all are pertinent, so widespread, was the use of these substances as food preservatives. But for the purposes of this brief we shall content ourselves with a discussion of only nine of them, the other nineteen

being available if further evidence be desired of the various preservative uses to which borax and boric acid have been put.

Spear, U. S. Patent 67,921, *August* 15, 1867 (Def. Ex. 19, R., II, 1538).

This is the earliest patent of which we have any record describing the use of borax and boric acid as food preservatives. Claim 4 of the patent reads as follows:

> "Subjecting animal or vegetable matter to the action of a solution of boracic acid in the manner substantially as herein described for the purpose herein specified."

No subsequent patentee (prior to the patent in suit) has attempted to claim the use of borax or boric acid broadly. For example, in U. S. Patent No. 281,554, July 17, 1883 (Def. Ex. 28, R., II, 1559), the patentee distinctly disclaims anything novel in the use of boric acid in preserving foods, stating:

> "I am well aware that boracic acid has been used in almost every conceivable form as an antiseptic."

Gahn (Donn) U. S. Patent 161,944, *April* 13, 1875 (Def. Ex. 20, R., II, 1546).

This old patent issued over fifty years ago is so interesting and pertinent to the present inquiry that we take the liberty of quoting the body of it in full:

> "This invention relates to a new composition by which all kinds of raw food, fruit, and other vegetable products may be preserved for a longer time, and in warm climate; and the invention consists in compounding boracic acid and alum in the proportion of about twenty parts of boracic acid and ten parts of alum.
>
> This composition may be used in a powdered state, and then rubbed and sprinkled over layers of the

substance to be preserved, or in a liquid state, and then the substances to be preserved have to be dipped or immersed into the liquid. For this solution I prefer to use from eight to ten ounces of the powder to one gallon of water, or as much as the water will dissolve. Sugar in the proportion of about two parts to ten parts of alum and twenty of boracic acid may be also used to advantage, in addition to the ingredients named, and the proportion of the alum may be varied according to the amount of substances to be preserved, some kinds requiring but one part of alum to twenty of boracic acid, and some as much as ten parts of alum to twenty of boracic acid."

This patent deserves careful study. In the first place the object of the patentee was to preserve raw food, fruit and other vegetable products a longer time in warm climate—precisely the objects sought by Messrs. Brogden and Trowbridge. One method followed by Gahn in attaining this object was to make a solution of his boracic acid and alum in water and then dip or immerse the substances to be preserved in the solution. Here again we have precisely the method followed by the patentees of the patent in suit. Gahn also specifies the concentration of his solution. It is from eight to ten ounces to one gallon of water, or as much as the water will dissolve. This falls squarely within the range of the patent in suit and is practically the preferred concentration of that patent. It is to be noted that in each case the patent adopts the sample course of recommending a degree of concentration that amounts to a saturated solution at an ordinary natural temperature of the water. In fact the only difference between the Gahn process and the Brogden process is that Gahn employs a small quantity of alum, and it will be observed that this alum may be reduced to as little as one part of alum to twenty of boracic acid. But, in any event, the alum would not affect the action of the acid and is added because of its

tanning and hardening effect. Dr. Alsberg made this quite clear in his testimony R., I, 350:

> "• • • alum has no preservative action. It has a tanning and hardening effect, and is so widely used. For example, it is a common thing in the making of vinegar or salt pickles, to use alum, so that the pickles remain firm through the winter and do not get soft and mushy, and now these articles which are preserved with borax or boracic acid are liable to soften and get a brown crust over the outside if they are packed dry in borax, as some of these patents provide, and the alum by tanning and hardening the tissues of the material has a tendency to counteract that effect. That is clearly recognized in the English patent granted to this same patentee that we will come to later, in which it is specified why alum is used, and the literature of that time describes that this man Gahn put on the market a preserving preparation under the name of Aseptin which analysts who analyzed it at that time, report to be in three forms, one without any alum, used in things like milk, and one with a small amount of alum, and another with a larger amount of alum. They were put on the market in those three forms, and he explains why he uses alum in the English patent as alum has only the preserving action in so far as by toughening the thing it makes the entrance of foreign organisms more difficult."

Plainly under this Gahn patent raw fruit was proposed to be kept as fresh fruit, for a longer time free from decay, under the very procedure of the Brogden and Trowbridge patent here in suit. The end in view under each patent is to have an orange (or other fruit or vegetable) with the rind or skin made mold-resistant, to a degree, by an application of borax or boric acid.

Under the Gahn patent the pores of the rind or skin are further somewhat closed against decay producing organisms by the hardening effect of alum, used in strength according to the kind of fruit treated.

It cannot be argued that by reason of the fact that the aqueous solution of boracic acid contained a little alum, an orange that had gone through such solution was in any essential sense different from an orange that goes through such a solution without the alum. Under both patents the dipping or immersing is the same process.

It is not to be assumed that oranges treated under the Gahn (Donn) process of 1874, were to be left in the boracic acid solution.

There is no escape from the conclusion that the process of the Gahn patent could not be practiced now without infringing the patent here in suit. And it is axiomatic that a process that infringes if later, anticipates if earlier.

Annual Report of the Commissioner of Agriculture for the year 1878, *page* 577 (Def. Ex. 12, R., II, 1504).

This publication discusses the use of borax as a preservative in butter. The following is quoted from the report:

> "The antiseptic virtues of borax being well known as well as the experiments to preserve meat and other edibles by its aid, it occurred that it might be substituted in butter in place of common salt. On trial it was found not to change in the least the flavor of the butter and indeed preserved it admirably."

Fagersten U. S. Patent 221,541, *November* 11, 1879 (Def. Ex. 24, R., II, 1552).

This patent relates to the preservation of meats and has for its object to kill and remove from the meats germs, fungi, mold or slime. This object is attained by dipping the meats in a hot solution of boric acid or its salts, such as borax. The novelty claimed for this process resides in the use of the hot solution, the patentee stating, "I do not claim, broadly, the use of boracic acid

or its salts as I am aware they have been used in a powdered condition and in a cold solution, but I am not aware that a hot solution of boracic acid or its salts has been heretofore used for the purpose of preventing mold upon meats."

The only caution needed to be observed by one desiring to extend this process to fresh fruit is the very caution that is set out in the Brogden and Trowbridge patent here in suit: "The bath of treating solution should not be hot enough, however, to scald or cook the fruit" (R., I, 590).

Hauff U. S. Patent 234,567, *November* 16, 1880 (Def. Ex. 25, R., II, 1554).

This is another patent relating to the preservation of foodstuffs, both animal and vegetable. The patentee states: "My invention consists in a preserving compound produced by mixing boric acid and borax, then dissolving the mixture in water and finally evaporating the solution to dryness." He goes on to state that boric acid, because of its fatty nature is wetted with difficulty and hence cannot easily be put in solution. In order to overcome this difficulty he adds the borax. The resultant mixture is easily soluble in ten parts of water which solution can then be used as a preservative. Here then is a patent which fully discloses the food preservative properties of both borax and boric acid and gives specific instructions for the preparation of a ten per cent. solution.

This patent discloses three of the four things that were pointed to by the Courts below as the elements of invention in the patent in suit. In both patents we have (a) the specific object, vegetable foodstuffs (fruits and vegetables) (b) the specific force, a solution carrying the boric acid radical in substantial strength, (c) a specific result aimed at, the preserving of the foodstuff. The fourth element of patentability, (d) a specific mode of application, is clearly defined by common sense, and

by practices which the District Court itself read into the case as common in the prior art (supra, p. 6).

Hauff frankly left the manner of application of his borax solution as a matter of choice to be determined according to time and circumstance.

The claims of the patent in suit cover the same range of choice of method of application.

Storer British Patent 214 *of* 1888 (Def. Ex. 40, R., II, 1598).

Of his invention the patentee states: "My invention has for its object the preparation of packing material for the preservation in a cheap and convenient manner of all kinds of fresh fruits for the storing and for the transport thereof to near or distant markets; and the prevention for a reasonable time of decay or damage therein." In making this packing material he takes sawdust, chaff, etc., and impregnates it with a solution of boracic acid or borax, drys the impregnated material and then packs his fruit therein. This patent is particularly interesting because the patentee on page 2, line 21, specifically refers to oranges, lemons and limes—all citrus fruit—as fruit intended to be packed in his preservative mixture.

Horticulturist's Rule Book, published 1898, *pages* 186-187 (Def. Ex. 43, R., II, 1611).

On page 187 of this publication, under the heading "Preserving Fruits for Exhibition" there are directions for preparing various solutions in which fruit may be placed in order to preserve it for exhibition purposes; among these is a boric acid solution. The directions for making this solution, contained in paragraph 4 of page 187, read as follows:

> "Boric acid may be used as preservative by dissolving a half pound in 50 pounds of water. If the liquid is not clear, filter it. Useful for colored fruits."

This is a 1% solution.

Bishop U. S. Patent 683,899, *October* 8, 1901 (Def. Ex. No. 7, R., II, 1473).

This patent is one of the most interesting offered in evidence in view of the testimony given at the trial, by Frank Bishop, son of the patentee Simeon Bishop. The title of this patent is "Method of Preserving Foods" and we shall quote from it freely:

> "This invention aims to prolong the period of usefulness of fruit, vegetables, eggs and the like as articles of food and prevent their usual rapid decay and deterioration, thereby benefiting the grower, the shipper, the merchant, and the consumer.
>
> "The invention consists in subjecting the article of food to an antiseptic bath to purify, cleanse, and kill all germ, then treating it to a coat of air-excluding material. This process not only preserves the articles of food, but enhances its value.
>
> "The article of food to be treated is first washed or bathed in a comparatively weak solution of boracic acid, which destroys any and all germs and thoroughly cleanses and renders the article wholesome. The article is then coated with gelatin, which excludes the air and prevents the entrance of atmospheric germs, thereby preventing decay. * * * The boracic acid solution is prepared by adding two ounces of commercial boracic acid to one gallon of pure filtered water."

Here then is another clear disclosure of the use of a boric acid solution in treating fruit and vegetables to prevent decay. The concentration is 1.50%.

The Bishop patent has all of the precision of the patent in suit, and more. The Bishop patent fixes a strength of solution and method of application.

The Brogden and Trowbridge patent coming twenty-two years later is not staked on anything definite. It claims every degree of concentration from 2% to 20%,

and everything outside of that range that may be found to have an inhibiting effect (R., I, 591). And it claims every temperature of solution from the natural temperature of the water to a degree of heat just short of that which will scald or cook the fruit (R., I., 590).

Bishop suggests an air-excluding coating of gelatine, impregnated with boracic acid, to be added after the original boracic acid bath (R., II, 1474).

Bishop shows how he renders his gelatine coating antiseptic by adding boracic acid (R., II, 1474). Brogden's coating may well contain the same antiseptic. He does not say what antiseptic is added to his paraffine and natural oils and waxes of the citrus tree to make the mixture antiseptic as he says it is (R., II, 1467).

Frank C. Bishop testified that for two years he helped his father in the use of the Bishop process on oranges, pears and eggs. He said on cross examination that they selected the best fruit for this preservative treatment (R., I, 183); but it cannot be argued that he meant that they discarded fruit with the minute scratches, cuts, thorn pricks or bruises, described in the plaintiff's patent as frequent sources of infection (R., I, 587).

deSturler U. S. Patent 694,301, *February* 25, 1902 (Def. Ex. 30, R., II, 1566).

Quoting from the patent:

> "This invention relates to the preservation of vegetables, fruit, meat, eggs and other perishable substances either for storage or transit. • • •
>
> "The object of my invention is to treat foods externally in such manner that they shall be preserved for storage in transit for a much longer time than has hitherto generally been possible, and thus enable many kinds of foods, such as perishable fruits, to be transported long distances by sea or land and delivered in a perfectly fresh condition.
>
> "According to my invention the surface of the food or substance to be preserved is first treated with

> a sterilizing medium—such, for instance, as sulfurous acid, formic aldehyde, or boracic acid—by which the surface of the food or substance is both sterilized and protected from the deleterious action of the germs contained in the air."

Thereafter the food is wrapped in a wrapper which has been impregnated with these antiseptics.

This again is the very procedural program set out in the process in suit. deSturler treats fruits, vegetables, meat and other perishables with a sterilizing medium such as boracic acid. It is applied so as to remain there, because it is specified that "the surface of the food or substance is both sterilized and protected from the deleterious action of the germs contained in the air." It is not necessary to particularize as to method of application unless the method proposed is novel. The District Court found that borax and boric acid long have been applied as food preservatives in two ways, dry and in solution,—and referred specifically to the common process of immersion. These things are elementary practices, not patentable processes. Brogden and Trowbridge instead of saying with deSturler that the fruit is to be treated with the sterilizing medium, says that the fruit is to be subjected to the action of the medium (R., I, 597).

Curiously enough the subsequent paraffine coating disclosed by deSturler in 1902 is called for by the plaintiff's patent licensing agreements of 1924 as an element of what the plaintiff calls "the Brogdex system": first a borax bath, then a paraffine coating (R., II, 1342).

This point has been discussed in detail in connection with the discussion of the Bishop patent (supra).

The Particular Toxicity of Borax and Boric Acid to Molds, with Special Reference to the Penicillia.

The foregoing publications and patents prove conclusively that both borax and boric acid had been known

and used as antiseptics and food preservatives for many years prior to the filing of the patent in suit. These patents and publications show that not only were these antiseptics used in the preservation of meats, butter, and other animal products, but that they were used in the preservation of fresh fruit and vegetables including citrus fruit. It does not appear in every instance that the proponent of the use understood that he was using these antiseptics as fungicides although when used in the preservation of fruits or vegetables that would have been their function. However, the following publications will show that the fungicidal properties of borax and boric acid were well understood, and that it was also well known that they inhibited the growth of the penicillia or blue molds, the class of molds specifically mentioned in the patent in suit.

But, before proceeding with the consideration of these publications, it would be well to fix clearly in our minds just what blue mold is. On this point Dr. Alsberg's testimony is enlightening. He testified (R., I, 268):

> "Blue mold is a general term applied to a class of fungi, consisting of a large number of species that when they fructify they produce spores which have a color that varies from blue-green to different shades of green. The first accurate or approximately accurate description of that type of mold, segregating it from other molds, was made early in the Nineteenth Century by a man by the name of Link, a botanist, who first described as a species penicillium glaucum. His description is general, and it is not possible at the present day to say exactly which one of the many forms of penicillium that have blue or green spores. He actually had no observation on which he based his description. The result is that botanists of recent times have either abandoned that term altogether, or have restricted it to one of the many species, and have recognized and established a considerable number of other

species, all of which have blue-green or green spores; so that today penicillium glaucum is either not a recognized species for some botanists, and for others just one species. Some years ago it was a term which was used for a large number of species.

"You can find one or the other species of this genus of penicillium on a large variety of organic matter. It may be found on pretty nearly any kind of food. It may be found on other forms of organic matter. Different species are more common on one kind of organic matters than on another. As a rule it attacks only dead or injured tissue."

Now let us turn to the publications which show that borax and boric acid were long ago known specifically as fungicides.

Journal D'Agriculture Pratique, published in 1883, *pages* 75 *and* 76 (Def. Ex. 13, II, 1506).

This excerpt from this French Journal discloses the use of a borax solution in combating a mold on the leaves of grapevines. It appears from this disclosure that borax proved to be effective in checking the development of the parasite which was a fungus, although not closely related to penicillium.

Comptes Rendus of the French Academy of Science, 1892, *"Action of Boric Acid on Germination" by J. Morel, pages* 131, 132, 133 (Def. Ex. 18, R., II, 1535).

This experimenter worked with borax and boric acid to determine the effect of these antiseptics on germination. His conclusions are significant.

"The action of borax is altogether comparable with that of boric acid under the same conditions which seems to indicate that soda acts here in the same way as boric acid.

One is now in a position to predict—and I am carrying out a certain number of experiments along these lines—that boric acid acts strongly on the lower fungi and related organisms, the growth of

which will probably be completely inhibited by even very weak solutions.

If these assumptions shall be corroborated by facts, boric acid will be able to take a place by the side of copper sulfate to combat the mildew of the grapevine and the smut of wheat, perhaps also antracnose, oidium and other diseases due to cryptogamis organisms which infest useful plants."

Proceedings of the Indiana Academy of Science, 1909 —*"The Effect of Preservatives on the Development of Penicillium," by Katherine Golden Bitting, pages* 391, 400, 401, 403, 408, 409 *and* 410 (Def. Ex. 14, R., II, 1507).

A great number of preservatives were used in the experiments recorded in this article, but among others were borax and boric acid. The experiments show that the penicillium was adversely affected in concentrations as low as ½%.

Folia Microbiologica "The Effect of Boric Acid and Several Other Compounds Upon the Development of Penicillium Glaucum and Aspergillus Niger" by J. Boeseken and H. I. Waterman, published in 1912 (Def. Ex. 15, R., II, 1516).

This is a purely abstract investigation designed to get at the mechanism of the action of boric acid to see whether a certain theory of the action of toxic agents could explain the action of boric acid, and in order to carry out this investigation penicillium was used as the test organism. The conclusions found in the summary which is on page 358 of the German text are significant. These conclusions read in part:

"We ascertained: 1. That boric acid, even in extremely low concentration (+0.06 per cent.), has a distinctly inhibiting effect upon the development of Penicillium glaucum, and that this deleterious concentration is much higher in the case of Aspergillus (0.5 to 1 per cent.)."

U. S. Department of Agriculture, Bulletin No. 109 *by R. H. True published in* 1914 (Def. Ex. 11, R., II, 1495). This bulletin discusses experiments conducted by Dr. True for the purpose of overcoming mold on cigars. He states on page 5 of the Bulletin:

> "It will be seen that the organisms responsible for the most serious trouble (Aspergillus candidus, easily first in importance, and Penicillium glaucum) are not represented in the list of organisms introduced on the wrapper leaf, but seem to be always present in the tragacanth gum. The conclusion seems, therefore, to follow that in the case in hand the paste used in fastening the wrapper at the head of the cigar brought with it the troublesome organisms."

Penicillium glaucum was the old generic name for this group of molds. In treating the paste to prevent the growth of these molds, a number of well known antiseptics and fungicides were tried, among them boric acid. Boric acid was found to be completely successful in checking the growth of the molds and was adapted as regular routine practice. The reasons leading to the choice of boric acid, as expressed on page 7 of the bulletin, are as follows:

> "After considering which of these substances should be recommended for general use, boric acid was chosen because it is cheaper, does not undergo change in the paste, is more readily obtained, and is not liable to injure anybody if used in excess. The disadvantages of hydroquinone lie in its contrasted properties on the points enumerated."

This work of Dr. True is significant because he was confronted with the specific problem of inhibiting the growth of two well known fungi, one of them penicillium glaucum, or blue mold. One of the fungicides naturally

tried out was boric acid. This proved to be wholly successful, and because cheap and harmless, was immediately adopted. This clearly establishes, without further proof, the toxic effects of boric acid on blue mold.

"The Effect of Certain Agents on the Development of Some Moulds," by K. G. Bitting, pages 5, 24, 25, 26, 27, 46, 47 *and* 51, *published in* 1920 (Def. Ex. 17, R., II, 1525).

Among the molds experimented with and reported in this article was penicillium expansum, which is a mold of this group commoner on apples than it is on citrus fruits but very closely related to those on citrus fruits. Both borax and boric acid were used among other fungicides and found to be effective in delaying the development of the mold.

U. S. Department of Agriculture, Department Circular 237, *published August,* 1922 (Def. Ex. 10, R., II, 1480).

This is a report on some experiments conducted to determine what effect boric acid had upon certain molds. Eight different species of penicillium molds were treated, and it was found that the boric acid in some instances delayed the development of the penicillia and in some prevented their growth altogether.

All of the Foregoing Showing Ignored by the Circuit Court of Appeals.

The opinion of the Circuit Court of Appeals contains not one reference to the numerous prior patents and publications submitted by defendant showing the practice of preserving foodstuffs of all kinds, including fresh citrus fruit, by dipping in solutions of borax or boracic acid, to be old and well known. That the Circuit Court of Appeals gave any consideration to this prior art is deducible, if at all, from only a single paragraph of its elaborate opinion, in which the Court said:

> "There was doubtless prior use of borax as a preservative, but the record fairly interpreted, as the learned district judge found, clearly shows that there was no prior use of it as an inhibiting reagent for blue mold decay."

The statement that there was no prior use of borax "as an inhibiting reagent for blue mold decay" is clearly in error.

To begin with, while the Circuit Court of Appeals quotes the District Judge as finding to that effect, the fact is that he found just the opposite. The District Judge found inter alia as follows:

> "The use of a hot solution of boric acid or its salts to prevent the growth of fungi or mold upon cured meats by immersing or dipping them into the solution was disclosed as early as 1879" (R., I, 16).

And in the same connection the District Judge went on to find other like uses of boric acid as against penicillium molds including the application of boric acid to fresh fruits during storage and transportation. Dr. Alsberg, former Chief of the Bureau of Chemistry of the Department of Agriculture, testifying for the defendant, said that the principal cause of decay in meats, cheese, butter, fresh fruits, vegetables and other articles of food is the common blue mold. It is the well known efficacy of borax and boric acid as a preventive of just such decay that was responsible for its widespread use as a preservative. The action of the borax on the meat, cheese or fruit dipped in the borax solution has not been altered by the grant of this patent defining its action as an "inhibiting" action. If it inhibits now it inhibited then, and no amount of speculation as to the precise effect of the borax on the blue mold organisms can alter that fact. The commercial art is not interested in the effect of the borax on the organism. That may be a matter of con-

cern to the scientific research worker, and it is interesting to note that in the technical articles discussing the effect of borax on the blue mold organism (penicillium) its "inhibiting" action is fully explained.

The practical art is interested in the effect of the borax treatment *on the article of food;* and when the prior patents and publications and formulas state that by dipping the article in a solution of borax of a substantial degree of concentration it will be preserved against decay, they tell us the whole story and give all the directions necessary for the practical application of the borax treatment.

The Circuit Court of Appeals says:

> "We have an old and well known substance applied in a new and useful way and this constitutes invention."

But what we have seen is that under the process of the patent this "old and well known substance" is applied in the old and well known way, namely, by dipping the article to be preserved in the solution of borax.

Everyone knows that in applying a mild antiseptic of this sort, the stronger the solution and the more thorough the application, the better the effect; and everyone knows that a warm solution tends to open pores in the tissues treated and to secure more effective antisepsis than is secured by the use of a cold solution as was noted by Judge Dickinson in Brogdex Company vs. California Fruit Growers Exchange, No. 4,745, September Term, 1928, E. D., Pa. (unreported), when a preliminary injunction was sought under the force of the decree in the case here instant, "The question of how much borax is evidence of the pirating of the plaintiff's process cannot be determined from the claims of the patent in suit."

There were no investigations conducted by the citrus growers, packers, and shippers, scientific men and De-

partments of Agriculture—Federal and State, to find some reagent to control blue mold decay. There is not even a suggestion of any such investigation having been made from 1905 to 1923, when the application for the patent in suit was filed. But even if there had been any number of such investigations, all ending in failure, they could not sustain the holding that the dipping of an orange in a solution of borax is a new mode of application of that old and well known substance. The Court of Appeals in discussing the action which takes place when the fruit is dipped in the borax solution says:

> "The patentees proceeded upon a different theory. It was their idea, not to destroy spores, but by means of antiseptic borax solution seal the broken places in the citrus rind that had been punctured and thus close to the spores avenues through which they entered the fruit."

Even if this were something about the action of the borax not theretofore known, when applied in the old and well known way it could not confer patentability on this old and well known process. There is, however, nothing novel in the idea. It has long been known that the blue mold attacks the fruit at the abrasions of the rind. The slogan of the advocates of "careful handling" was that "a sound orange does not decay." Any treatment to be effective must be effective at the wounds. The Bishop patent states that the boracic acid dip renders the fruit "antiseptic." Anything more than this is an undue refinement. The whole fruit is dipped in the borax. The patent itself specifies that the term "blue mold" is not to be taken as restrictive, but as including all of the diseases and decay producing organisms to which the fruit may be subject. And the patent claims that the dipping is for the purpose of securing the benefit of the borax as a retardent of decay. The claims of the patent

are not limited to the broken places but extend to the entire rind of the fruit or vegetable treated.

> "A mere application of an old contrivance in an old way to an analogous subject, without any novelty or invention in the mode of applying such old contrivance to the new purpose, is not a valid subject matter of a patent." Case vs. Cressy, 18 R. P. C., 419 (1901).

It Is Not Patentable to Apply an Old Process to a New Subject.

The patent in suit relates broadly to the treatment of fresh fruits and vegetables to preserve them from molds. In this it does not differ from Gahn:

> "This invention relates to a new composition by which all kinds of raw food, fruit, and other vegetable products may be preserved for a long time, and in warm climate; and the invention consists in compounding boracic acid and alum in the proportion of about twenty parts of boracic acid and ten parts of alum" (R., II, 1546).

Nor from Bishop:

> "This invention aims to prolong the period of usefulness of fruit, vegetables, eggs and the like as articles of food and prevent their usual rapid decay and deterioration, thereby benefiting the grower, the shipper, the merchant, and the consumer" (R., II, 1473).

Nor from deSturler:

> "This invention relates to the preservation of vegetables, fruits, meat, eggs and other perishable substances either for storage or transit. * * *

"The object of my invention is to treat foods externally in such manner that they shall be preserved for storage in transit for a much longer time than has hitherto generally been possible, and thus enable many kinds of foods, such as perishable fruits, to be transported long distances by sea or land and delivered in a perfectly fresh condition" (R., II, 1566).

While the particular infringement charged in this case relates to the application of borax to oranges with the prevention of blue mold decay in mind, and it is true that blue mold is the most important cause of decay under most conditions, yet none of the plaintiff's witnesses in their decay percentage estimates confined themselves to blue mold decay. They included decay from all causes (R., II, 1340; R., I, 25). And, it was shown that stem-end rot and other kinds of decay are very important factors under certain circumstances (R., I, 71). Also, the plaintiff showed that in the season of 1926 1,300,000 boxes of apples were treated with borax under this patent in the single State of Washington (R., I, 95).

The patent cannot be looked upon as one for the treatment of oranges; and if it could there would be no patentable novelty in applying to oranges a preservative old in the treatment of other, fresh fruits, as well as many other raw foodstuffs.

In Brown vs. Piper, 91 U. S., 37, the patent in suit was "for a new and improved method of preserving fish and meats" which consisted in placing the fish or other articles "in a chamber, and cooling the latter by means of a freezing mixture so applied that no communication shall exist between the interior of the preserving chamber and that of the vessels in which the freezing mixture is placed." The defendant proved that the same process had been used for preserving corpses. This the plaintiff admitted, but insisted that the process had never been

applied to the preservation of fish and meats; as to which this Honorable Court said:

> "Here was the application of the requisite degree of cold, exactly in the manner called for in the specification of the appellee.
>
> "This is hardly denied; but it is insisted that the process was never applied by the witness to the preservation of fish and meats.
>
> "The answer is that this was simply the application by the patentee of an old process to a new subject, without any exercise of the inventive faculty and without the development of any idea which can be deemed new or original in the sense of the patent law. The thing was within the circle of what was well known before, and belonged to the public. No one could lawfully appropriate it to himself and exclude others from using it in any usual way for any purpose to which it may be desired to apply it. This is fatal to the patent."

The parallel between the facts in Brown vs. Piper and the present case is arresting. There the patentee stated:

> "I do not profess to have invented the means of artificial congelation, nor to have discovered the fact that no decay takes place in animal substances so long as they are kept a few degrees below the freezing point of water; but the practical application of them to the art of preserving fish and meats, as above described, is a new and very valuable improvement."

Here the patentees have, in effect, stated that they do not profess to have discovered the fact that borax and boric acid prevent decay in foods, but that the practical application of them to the art of preserving fresh fruits and vegetables is a new and very valuable improvement. And to this the answer will be the same as that given Piper fifty years ago.

In Pennsylvania R. R. Co. vs. Locomotive E. S. Truck Co., 110 U. S., 490, the Court stated the rule of law to be as follows (p. 223):

> "It is settled by many decisions of this Court, which it is unnecessary to quote from or refer to in detail, that the application of an old process or machine to a similar or analogous subject, with no change in the manner of application, and no result substantially distinct in its nature will not sustain a patent, even if the new form of result has not before been contemplated." (Citing numerous cases.)

In Lovell Mfg. Co. vs. Cary, 147 U. S., 623, the Court had before it a patent for a method of tempering springs, the invention being specifically adapted to the tempering of furniture or other coil springs. The prior art showed that a similar method of tempering had been used for other than furniture springs and the Court held the patent invalid, saying (p. 311):

> "But it does not amount to invention to discover that an old process is better in its results when applied to a new working, than would have been expected, the difference between its prior working and the new working being only one of degree and not one of kind. It has been often held that the mere fact that one who uses a patented process finds it applicable to more extended use than has been perceived by the patentee, is not a defense to a charge of infringement. It follows necessarily that the public cannot be deprived of an old process because some one has discovered that it is capable of producing a better result, or has a wider range of use than was before known."

In Arlington Mfg. Co. vs. Celluloid Co., 97 Fed., 91 (C. C. A., 3rd), the patent in suit was for a method of producing pyroxyline compound in imitation of onyx, the

claims being (1) for the method and (2) for the product. The patent was declared invalid because substantially the same method had before been employed in making an imitation agate and making imitation stone veneer. The Court said:

> "It was also known that by the introduction of coloring matter different colors or tints could be imparted to the finished product and that by subjecting, while plastic, two or more sheets or pieces of celluloid different in color or tint to a rolling or other kneading or mixing process the different colors or tints could be blended in such manner in the finished product as to present a variegated, veined, mottled or clouded appearance, and cause such product to imitate a variety of natural objects or substances * * *" (p. 92).
>
> "That the Mehling [prior art] method relates to cement while that in question relates to celluloid or other pyroxyline compounds is a wholly immaterial difference. The two methods cannot be distinguished from each other in their relation to the production of artificial veins, streaks, or bands" (p. 95).

In Reynolds vs. Standard Paint Co., 68 Fed., 483 (C. C. A., 3rd), the patent in suit claimed "as a new article of manufacture and of commerce, paper pointed or saturated with a compound of bisulphide of carbon and maltha, substantially as herein set forth." The Court held the patent invalid because it was old to coat paper with other substances and the substitution of maltha instead of such other coating substances did not amount to invention.

In Zinsser, et al., vs. Krueger, 48 Fed., 296 (C. C. A., 3rd), the Court held invalid a patent for charging beer with carbonic acid by dropping into and through the liquid lumps of bicarbonate of soda, saying (p. 300):

"Complainants do nothing more than apply the lumps or cartridges to beer instead of to water, and thus adopt an old form or method of applying the alkali without any novelty in the mode of its application; and this, it has been frequently decided, will not sustain a patent, even if the new form of result has not been before contemplated."

See, also, National Tube vs. Spang, et al., 135 Fed., 351 (C. C. A., 3rd); and Hansen vs. Slick, 230 Fed., 627 (C. C. A., 3rd).

In DeLamar vs. DeLamar Min. Co., Limited, 117 Fed., 240 (C. C. A., 9th), the patent related to a process of precipitating precious metals from cyanide solutions by adding zinc dust and agitating. But the same process had been applied for precipitating copper; the Court held:

"It is perfectly plain that the process here described,* of using zinc dust or fume with mechanical agitation for the precipitation of copper is the identical process stated in the first claim of the Waldstein patent for precipitating gold and silver. The latter was nothing more than the application of that old process to analogous matter, producing a result substantially similar in its nature, and was therefore entirely lacking in invention" (citing authorities).

"We are unable to see any invention in anything disclosed by the Waldstein patent, and must therefore affirm the judgment of the court below. The real inventor is undoubtedly to be encouraged, and the courts should always be careful to protect his rights; but it was never the intention of the patent law to give a monopoly to a mere follower of the knowledge and ingenuity of others. The judgment is affirmed."

* * * * *

*(In a prior patent.)

But of all such cases Sewall vs. Jones, 91 U. S., 171, is perhaps the most interesting because the facts were substantially on all fours with those in the instant case. The patents in suit, granted on inventions of one Winslow, related to the preservation of Indian corn. The kernels were first removed from the cob and then heated in sealed cans. A Frenchman by the name of Appert had, years before, obtained a British patent for the same process applied not specifically to Indian corn, but to animal or vegetable foods generally. Appert not being particularly interested in the preservation of Indian corn said nothing, of course, about first removing the kernels from the cob. The plaintiff tried to make much of this. There were, besides, other differences in the procedure but the Supreme Court held these to be of minor importance and to vary with the particular vegetable to be preserved, saying:

> "We are of the opinion that the substance of all that is found in Winslow's patent had, nearly half a century before he obtained his patent been put forth in Durand's (Appert's) patent."

The fact that Winslow's process was specifically intended, and indeed adapted, to the preservation of Indian corn, while Appert's patent did not even mention Indian corn but only animal and vegetable substances generally did not affect the decision. In conclusion the Court stated:

> "The discovery in question has been of immense benefit to mankind. By means of food preserved in a compact and nutritious form, protected from its natural tendency to decay, deserts are traversed, seas navigated, distant regions explored. It is less brilliant, but more useful, than all the inventions for the destruction of the human race that have ever been known. It is to France that the honor of

this discovery belongs, and to Appert, a French citizen. It does not belong to America or to Winslow. Appert's process presents all that we now know upon the subject. It contains absolutely everything of value that is contained in Winslow's patent."

In the present situation it was to Gahn, a citizen of Sweden to whom must go the honor of teaching the world the preservative properties of borax and boric acid, and not to Brogden and Trowbridge.

Thus if the invention really does have the broad scope which it purports to have and is applicable to fresh fruits and vegetables generally, it is surely anticipated. If, on the other hand, it is a message addressed to the citrus industry only, then the patentees have done no more than apply to oranges a process old in connection with fresh fruits and vegetables generally. And this is not patentable.

It *cannot* be patentable. The public has rights which cannot be ignored, and certainly the right to use borax and boric acid as antiseptics and preservatives is one of them. Three generations of housewives have been aware of the preservative qualities of borax. More than three generations of pharmacists have understood the antiseptic properties of boric acid. Twenty years or more ago the use of borax as a food preservative became so widespread and notorious that it became necessary to regulate this use by statute. In the face of these things doesn't it seem a little absurd that at this late date a valid patent should issue purporting to cover borax as a preservative when used on a particular class of foods?

If Such Extension of Use to Oranges Were Invention, Nevertheless the Patent Falls Because of Prior Uses of Borax for Prevention of Decay of Oranges.

In 1900 *Dr. Simeon Bishop* of San Francisco applied for a patent to cover his process of prolonging the period of usefulness of fruit, vegetables and eggs and the like and preventing their usual rapid decay and deterioration, "thereby benefiting the grower, the shipper, the merchant and the consumer." The same year Dr. Bishop and four others procured the incorporation of the "Antiseptic Fruit and Egg Packing Company," with an authorized capital of $50,000 for the purpose of dealing in eggs, fruits and other perishable articles of food prepared under the process of the Bishop patent (R., II, 1470). The process of the Bishop patent comprised the immersing of the article in a boracic acid solution and later coating it by means of a gelatin solution bearing boracic acid. One of the claims included the further step of wrapping the article in tissue paper which had been impregnated with a solution of boracic acid.

This in all essentials is the process of the Brogden and Trowbridge patent here in suit. Manifestly one could not take advantage of the disclosures of the Bishop patent without infringing the claims of the Brogden and Trowbridge patent.

Simeon Bishop is dead. The plaintiff brought his son, Frank C. Bishop, from California and had him in New York while the plaintiff's case was being presented in the District Court at Wilmington, Delaware. As the plaintiff did not call this important witness, the defendant, instead of showing these circumstances and arguing an unfavorable presumption against the plaintiff, had the witness brought down from New York (R., I, 116) and examined him as the defendant's own witness. Mr. Bishop testified that as a young man of eighteen or nine-

teen, having graduated from high school, he helped his father for about two years in this business of preparing eggs and fruit for the market. He recalled definitely applying the boracic acid process to oranges throughout this period of two years and said that the business was not renewed after the San Francisco earthquake and fire (R., I, 178-9).

A number of packing house operators and other witnesses testified to a similar use of borax for the same purpose for various long periods in seven different orange packing establishments, two in California and five in Florida.

F. S. Pond, now dead, formerly was prominent in the Florida citrus industry. As packing house manager for two different Florida packing houses at different times he introduced the use of borax to prevent decay, stating that he had practiced such use in California. We have the testimony of one witness to this use at Tavares, Florida, in 1913-14, and six witnesses to the use at Eustis, Florida, in 1914-15.

J. C. Thompson continued this use of borax at Tavares after Pond left.

B. F. Chilton, who died in 1910, had been a packing house manager near New Smyrna, Florida, for a number of years, and used borax in the wash water to prevent decay. This use is supported by the testimony of four witnesses.

Albert E. Barnes testified that as packing house manager at Ocala, Florida, he used borax in the wash water primarily to clean the fruit and secondarily to prevent blue mold.

Albert H. Morgan, manager at Rialto Heights, California, since 1916, testified to using borax in the wash water for ten years, for the purpose of retarding "blue mold" decay. His testimony was supported by a witness who was assistant manager of this packing house for two years prior to 1920.

A. J. Davis, manager for Call at Corona, California, for a number of years following 1907 was offered and received a salary bonus for a substantial reduction in decay, which he brought about by purposeful use of borax.

E. D. Howard, packing house manager for Corona Packing Association of California, learned of the definite utility of borax from A. J. Davis. He saw Davis use the borax in his wash water and adopted the same practice and continued it until the Corona Packing Association house was closed in 1917.

Geo. W. Palmer became familiar with the use of borax as a "bactericide" in New York State creameries, and with that specific knowledge in mind adopted the use of borax as a preventive of decay in his own packing operations at Emporia, Florida, about 1907, and continued that practice until he stopped packing his own fruit about 1924. Palmer's testimony was corroborated by the testimony of a neighbor.

All of these uses except one, while persisted in for a long time, were discontinued many years ago by reason of deaths, shutting down of packing houses and other similar reasons. Such a simple fact as that of adding borax to the wash water in a packing house is one that is not likely to be the subject of confusion of memory. And in each case the evidence with respect to that simple practice is just such evidence as would be apt to remain after a long lapse of time. The substance and character of the testimony as to these prior uses was as follows:

THE BISHOP USE.

We have already discussed the Simeon Bishop patent which discloses a process of treating fruit, vegetables and eggs to prolong their period of usefulness, consisting

in bathing these articles of food in a bath of boracic acid and then coating them with gelatine. At the risk of painting the lily, we called as a witness Frank C. Bishop, a son of Simeon Bishop, to testify as to the commercial operations carried on under this patent. He testified that a company was incorporated under the name of the Antiseptic Fruit & Egg Preserving Company to carry on the business of treating fruit and eggs under his father's patent, and that this business was carried on in San Francisco for about two years—from 1902 to 1905 (R., I, 177). A certified copy of the articles of incorporation of the Antiseptic Fruit & Egg Preserving Company was identified by Mr. Bishop and offered in evidence as Defendant's Exhibit No. 6 (R., II, 1479). Mr. Bishop testified that he was personally engaged in the business, his duties being to process the articles. He was 18 or 19 years of age at the time (R., I, 178). The patent mentions the treatment of fruit, as well as eggs and Mr. Bishop testified that, at least, two fruits, oranges and pears, were treated (R., I, 179). After the fruit was dipped in the boric acid solution it was dried and coated with gelatine. Mr. Bishop testified (R., I, 180):

> "I did the dipping. As near as I can recollect we had a sort of a wire container that we put a certain number of articles in, eggs or fruit, and submerged into the boracic acid solution first and then we would take that out and put it on a—the eggs we would put on the table and after that we dipped them in the gelatine solution and then we had sort of little racks for them, as I remember, something like a lath that they would fit in so that they would not roll off and the fruit we did the same. We let the fruit dry and then dipped it into the gelatine and set the fruit up again to dry."

Here then we have clear and uncontradicted testimony to the effect that during the years from 1902 to 1905, a

company operating in San Francisco, California, was engaged in the business of treating oranges and other fruit to preserve them and lessen decay by dipping the fruit into a solution of boric acid. Thus, Simeon Bishop not only patented his process, but demonstrated its practical utility by forming a company and commercially exploiting it. No attempt was made to cast any doubt upon Frank Bishop's testimony, and it stands unassailed. Indeed plaintiff could not well attack it because Frank Bishop had actually come all the way from California at the instance and expense of the plaintiff. It is difficult to see why the Bishop patent, coupled with this Bishop use, does not wholly and completely anticipate the Brogden and Trowbridge invention, and invalidate the patent in suit.

The Bishop process, as described in the Bishop patent, and as practiced by the Antiseptic Fruit & Egg Preserving Company involved not only the treatment of the fruit with boric acid, but the subsequent coating of the fruit with gelatine. Whether such a coating treatment would be commercially feasible today, we do not know. But this, we submit, is wholly immaterial. The coating step of the process is independent of the boric acid treatment and may obviously be used, or not, as conditions may dictate. Surely there can be no merit in the contention that the public is not now free to use any or all parts of the process set forth in this expired Bishop patent. It is probable that plaintiff will argue that the gelatine seals the pores of the fruit and prevents breathing, thus producing a breaking down of the cell structure and ultimate destruction of the fruit. As to this it may be observed first, that plaintiff offered no evidence in support of this imagined action, second, that the Antiseptic Fruit & Egg Preserving Company apparently experienced no difficulty from this cause, and third, that oranges coated with gelatine by Mr. Markell of the de-

fendant showed no signs of deterioration after twelve days (R., I, 205). And it may be noted that the coating provided for under plaintiff's dual Brogdite-Brogdex system (R., II, 1342) is held out as justifying the statement: "Brogdexed fruit is waterproof and air proof" (R., II, 1466).

THE POND USE.

F. S. Pond went from California to Florida in 1911, and became a packing house manager at Tavares (R., I, 501). Minos E. Miller, an Exchange manager of the district saw him using borax in his wash water during the period of two years, and was told that it had been his custom to use it in California, and that he claimed to be using it at Tavares to advantage in the prevention of "blue mold" decay (R., I, 498). Under cross examination Mr. Miller gave much circumstantial detail with respect to this Pond use, including the statement that Pond used warm water with the borax in the soaking tank (R., I, 500, 504). And the inherent probability of truthfulness in Mr. Miller's statement finds collateral support in the fact that six witnesses, in addition to Mr. Miller, testified that when Mr. Pond left Taveres and became manager of a packing house at Eustis, he carried this borax procedure to Eustis and used it there during his incumbency. A. R. Sandlin, citrus fruit grower and realtor knew Mr. Pond at Eustis about 1914. He knew that borax was being used in the wash water to prevent "blue mold," and Mr. Pond told him that the secret of his success in keeping down decay was that he used borax in his wash water (R., I, 185). Samuel L. Harris, owner and manager of extensive groves, was Vice President of the Packing House Company at Eustis during Mr. Pond's management. They sent Mr. Pond to California to buy packing house machinery, and Mr, Harris

discussed the borax use with Mr. Pond (R., I, 192). William T. Du Pree was a packing house manager who visited Eustis and learned of Mr. Pond's practices and claims with respect to borax (R., I, 198). G. W. Holmes was president of the bank at Eustis and also president of the Packing House Company when Mr. Pond was in charge. He knew about the use of borax as a preventive of "blue mold" rot (R., I, 492). H. H. Allen, a fruit grower of Eustis and director of the Packing House Company recalled the stock of borax that Mr. Pond carried in the store room (R., I, 495). Walter A. Robinson worked for Mr. Pond in the Eustis packing house. He testified that they kept borax on hand at all times and used it as a preventive of decay (R., I, 470).

It is to be noted that the active period of these Pond uses was from about 1912 to 1915, and that the plaintiff has in evidence publications of that period offered to show what the industry was being taught with respect to the prevention of "blue mold," for example, the plaintiff has submitted extracts from the proceedings of the Florida State Horticultural Society for the years 1912 (R., II, 902-910), 1913 (R., II, 936-7, 941-2, 956), 1914 (R., II, 1063-4) and 1915 (R., II, 1086). It there appears that continuously it was taught that the thing to do to prevent "blue-mold" was to avoid mechanical injuries, pack the fruit when it was thoroughly dry and keep it reasonably cool. Whatever they said about sanitary practices was purely incidental, for example, in the report of the proceedings of the State Horticultural Society for 1915, after referring to the standard practices of "careful handling" and the "five years of experimentation by government experts, and enthusiastic practical experience instigated by the Florida Citrus Exchange," the following collateral statement is made:

> "During the early experience in washing, it came to be believed that 'washing' greatly increased the

decay of fruit. With the careful packing and handling of fruit, and the great improvements in washing machinery, the supposed bad effects of washing have mostly disappeared.

The best outfits for washing, now consist of a soaking tank filled with hot water, containing an alkaline cleansing powder, especially where the fruit is black from sooty mold from the whitefly. Gold Dust or other alkaline powders are now used in the water" (R., II, p. 1086).

With the whole industry enthused for "careful handling" as manifestly the best means of avoiding "blue mold," and with the use of alkaline washing powders or other detergents a matter of every-day practice, it was not to be expected that such a thing as the use of borax by Mr. Pond and other packing-house operators would attract particular attention or be made a matter of particular record. Here and there a packing-house manager gave thought to the fact that borax was commonly used to prevent the molding of cheese, meats and other food products, and thought it worthwhile to use the same thing on oranges, doubtless often influenced also by the fact which Brogden and Trowbridge hold out in the very patent in suit that borax has "excellent cleansing or detergent properties" (R., I, 590).

THE THOMPSON USE.

J. C. Thompson, a contractor for mechanical work, living at Tavares, Florida, since 1911, followed Mr. Pond in the Tavares packing house and was superintendent there. In bad seasons for decay he used borax in the wash water as a preventive (R., I, 504). Some of the borax was shipped from Jacksonville, some was bought from a local grocer now dead. A stock of borax was carried in the packing house store room. Mr. Thompson

customarily dissolved the borax in warm water and then added it to the washing tank (R., I, 504).

THE CHILTON USE.

Benjamin F. Chilton, managed the grove and packing house property at New Smyrna, Florida, known as Ronnoc Groves Estate, for twenty-seven years prior to his death in 1910. Mr. Chilton's son, Kirby L. Chilton of New Smyrna, was twenty-one years old when his father died, and was working in his father's office at the packing house. He stated that his father brought back from California the idea of using borax to keep down decay and that he knew of its use. Mr. Chilton gave this testimony with convincing details (R., I, 473). Jonas Meeks, a workman at this packing house knew of this borax use (R., I, 479). Gus Taylor, who had charge of the washer at the same packing house, testified clearly that he used borax in the washing tanks for six or seven years under instructions from Mr. Chilton; and that it was used to keep down decay. He recalled that the borax was brought in by wagon in half barrels (R., I, 481). Shadrach Manning was a foreman at one of the two packing houses under Mr. Chilton, and testified to the use of borax to prevent decay (R., I, 513).

One indication of the weight of this testimony is seen in the frequent references to Shadrach Manning in plaintiff's rebuttal, under the abbreviation "Shady" Manning (R., I, 536, 551, 552, 554) with no attempt to justify the innuendo.

THE BARNES USE.

Albert E. Barnes had twelve years experience with the California Fruit Growers Exchange, and later was in the orange-packing business in Florida. At Ocala, Florida,

he used borax regularly in his washing tanks and was of the opinion that it helped to preserve the oranges against "blue mold" and other decay (R., I, 511).

THE MORGAN USE.

Albert H. Morgan had been using borax regularly in California, to retard decay, for at least seven years prior to the claimed date of the alleged invention in suit. Mr. Morgan testified at the trial. He is a man of important business and financial standing. His testimony was clear and circumstantial. Mr. Morgan's testimony was given detailed support by the testimony of George Wood, a fruit buyer, who was assistant manager for Mr. Mo[illegible] at the Rialto packing house in California from 1918 to 1920 (R., I, 418). It would be difficult to read the deposition of Mr. Wood, and then read Mr. Morgan's testimony taken at the trial without having the conviction that it was the regular practice at the Rialto packing house to use a warm-water solution of borax in the soaking tank for the purpose of retarding or preventing decay.

THE DAVIS USE.

A. J. Davis, a fruit grower and packer, told an interesting story of how he first came to use borax in treating oranges. Back in 1908 or 1909 he was working for the A. F. Fruit Company at Corona, California, and that company, like all the rest, was having trouble with decay. So Call made Davis a proposition. He promised that if Davis would cut down the percentage of decay a certain specified amount, he would raise his salary $25.00 a month. This offer stimulated Davis into activity. Davis being familiar with the use of borax in curing meats,

thought that it also would prevent blue mold decay in oranges and lemons (Davis deposition, R., I, 427). Accordingly, he tried putting borax in the wash water. At first he found that when using cold water the borax would not dissolve readily, and he, therefore, heated the water to a temperature of about 115° F. At this temperature he had no difficulty due to re-crystallization of the borax in the tank. The borax did check the decay and Davis got the promised raise.

THE HOWARD USE.

E. D. Howard was the foreman of the Corona Packing House in 1913 and was having a lot of trouble because of decay. The report showed, however, that A. J. Davis was getting less decay than the rest of the packers (R., I, 442) so Howard asked Davis what he was doing to get such good results. Davis told him that he was washing his fruit in warm water containing borax (R., I, 443). As a result of this conversation Howard had his Association install a steam plant for heating the water in the wash tank and in 1915-1916 he started the use of borax.

THE PALMER USE.

George W. Palmer is a small grower residing in Emporia, Florida. Since 1905 he has been engaged in growing, packing and shipping oranges (R., I, 453) and has continued in this business practically every year since (R., I, 454) except that two years ago he stopped packing his own fruit and is now shipping through a citrus association (R., I, 462). His business is a small one varying from a few to 500 boxes a year (R., I, 457). He has always shipped directly to the customer and never to dealers. Mr.

Palmer is still living and his deposition relates to the practice which he employed up until 1924 when he stopped packing his own fruit. He testified that ever since 1907-08 (R., I, 464) he had been dipping his oranges in a borax solution prior to shipping them to inhibit the growth of blue mold whenever blue mold decay became prevalent. It is interesting to note that he used borax in treating oranges because he had known of its use in New York State in the treatment of butter and cheese—a mere carrying forward of an old use.

The Foregoing Evidence of Prior Application of Claimed Process to Oranges Given Qualified Acceptance by the Court With No Finding to Indicate the Courts' Line of Demarcation Between What Was Accepted and What Was Rejected.

With respect to the evidence of prior uses the District Court said:

> "The alleged prior uses relied upon are many. That borax was used in the preparation of citrus fruits for market by several persons prior to the date of the invention in suit cannot, I think, be seriously questioned. But borax is a cleansing agent and frequently used as a washing powder as well as an antiseptic and preservative. That it was used by any one prior to Brogden and Trowbridge for the purpose of preventing decay and in such manner as effectively to prevent decay or otherwise than as a washing powder is not established by the evidence with that degree of certainty which is required with respect to prior uses" (R., I, 19).

The Circuit Court of Appeals held to the same effect (R., I, 577). Neither Court vouchsafed any references to the testimony of any of the considerable number of witnesses thoroughly established as men of consequence

in widely separated districts who, without interest in the event, persisted in the sworn statement that throughout long periods they used borax in their orange washing tanks with a view to retarding decay adequately and successfully, or in the case of some witnesses, knew of such use in packing houses with which they were connected immediately as packing company officials or as workmen, superintendants or foremen.

Neither Court gave any indication as to what tests of credibility or probability were applied or any indication of what testimony was accepted and what testimony was rejected.

The Evidence of Prior Uses Is Sufficient in Quality and Amount Under the Decisions.

After permitting itself to be governed by the view that a showing of specific prior uses of borax as an inhibiting reagent for blue mold decay of oranges, was the only thing that could surmount the bar of unsuccessful search which stood in the way of asserting the earlier conclusion of non-invention, the Circuit Court of Appeals had before it the clear disclosure and use under the Bishop patent and gives no indication as to how it arrives at the conclusion which is stated, with no visible connection with any evidence, that the record clearly shows that there was no prior use of borax as an inhibiting agent for blue mold decay (R., I, 577).

And since the Court gave no attention to the Bishop patent under which oranges were actually subjected to the action of boracic acid in a way that would be an infringement under the present decree, both as to the process claim and as to the product claim, the Courts' rejection of the eight other uses in evidence can not be given much weight as a self-sustaining conclusion.

In considering the testimony offered in support of these various uses alleged to have been long continued at various points in Florida and in California, a persuasive element of inherent probability will be seen in the fact that this claimed use of borax was just such a thing as was probable to have been found as a practice in the preparation of oranges for the market. It is beyond question, as the Court found, that it was a matter of common knowledge that borax was an antiseptic much used in preserving articles of food by a process of immersing the article in a solution of borax. It is further fact, as found by the Court, that borax actually was used in the washing and soaking tanks in packing house practice. There is much evidence in the case to the effect that oranges are subject to many kinds of growth of bacteria, spores and scales and diseases and that cleansing and disinfecting were everyday practices. Accordingly it is natural that some of the many packing house operators knowing borax as a cleansing and preserving agent would use it as a preservative.

And when many disinterested witnesses from different States say that they did use borax as a preservative as well as a cleansing agent and some of them refer to specific things that emphasized in their minds this conception of use, as in the case of Geo. W. Palmer, who had been familiar with its use in the dairy business in the State of New York, the importance of this element of inherent probability is emphasized.

Testimony as to these uses rings true throughout. Take, for example, Palmer's statement (R., I, 453-4):

> "I began shipping my fruit myself, and I had some trouble as I remarked, about decay, and I thought to use something to overcome that blue mold decay and I tried the use of the 'standard Bordeaux.' This bordeaux is used as a fungicide on a great many farm and fruit crops and I was satisfied in

my own mind that it would overcome this blue mold and wither tip fungus. I still think it would work all right but it left a dark looking residue on the fruit, which was, of course, poison, and I abandoned the idea. I understood the use of borax, more as the use of a bactericide in New York State in the interest of their creameries, etc., where it was used to prevent bacteria that caused loss of flavor in butter and cheese. Remembering these things I concluded that the borax would work on the fruit for about the same purpose and tried it. As I remember it I have used, or did use a solution of perhaps 2 or 3% Baume to start—it gives the specific gravity—but of course this solution would be strengthened as I washed the fruit put in and added more borax and more water to make up for the loss which the fruit itself would take up. Now, I used this experimentally to start with but became perfectly satisfied in my own mind that this borax solution would prevent decay in oranges or citrus fruit, and experience of twelve or fifteen years bears out this idea."

He was asked on cross examination (R., I, 461):

"I gather from your testimony that you wish to be understood as considering that you made quite an important discovery when you hit upon this method of treatment which, I believe you said, you began very soon after you began shipping fruit?"

And he answered:

"I never considered that I had made any real discovery. I was simply adapting the use of borax to this purpose, which is, or may be one of the many of the uses to which borax was put. Borax being a natural production I did not consider that it was a discovery brought about by man, or made by man, but that the adaptation of its use could properly enough be considered as an adaptation only. Mixed metaphors perhaps."

* * * * * *

This Palmer use, although convincing in itself, is strongly corroborated by the testimony of his neighbor Burden who witnessed Palmer's operations, knew that he was using borax, and actually observed with his own eyes the difference between treated and untreated culls (R., I, 468).

While a prior use set up in anticipation of a patent must be proved beyond a reasonable doubt, it is against reason and authority to say that a prior use can not be established by oral testimony alone. Oral testimony as to a prior use standing alone is apt to be rejected when in the nature of things there is substantial danger that the witness was mistaken as to the exact device or process.

But it was indicated in the leading case of Deering vs. Winona, 155 U. S., 286, 301, that a Court should find some genuine danger of mistake in the nature of the subject matter before rejecting inherently consistent testimony, reasonably probable in character in the light of the surrounding circumstances, and coming from witnesses of seeming good character and standing, apparently qualified by experience to testify as to the facts in question. In the case cited the Court said:

> "Granting the witnesses to be of the highest character, and never so conscientious in their desire to tell only the truth, the possibility of their being mistaken as to the exact device used, which though bearing a general resemblance to the one patented may differ from it in the very particular which makes it patentable, are such as to render oral testimony peculiarly untrustworthy; particularly so if the testimony be taken after the lapse of years from the time the alleged anticipating device was used."

But no such state of facts is presented here. This case is not concerned with mechanical devices of complex structure about which the witnesses might be mistaken.

The prior use testimony here is directed to a single, simple fact, namely, the use of borax in the wash water of the several packing houses to prevent or retard the decay of the fruit. In circumstances such as presented here, where there are no details or complications about which the witnesses might be mistaken, the Courts have uniformly held that oral testimony of reputable and unimpeached witnesses is all that is required to establish a prior use.

In Sipp Electric & Machine Co. vs. Atwood-Morrison Co., 142 Fed., 149, 153 (C. C. A., 3rd), this question was discussed at length by Judge Gray, speaking for the Court:

> "In addition to these patents, testimony was adduced, showing anticipatory use of the pivotal bracket in precisely the same kind of combination as is claimed in the patent in suit. There are two or more witnesses who testify to this previous use. There can be no doubt that the prior use, as testified to, clearly anticipates the pivotal adjustable bracket, with means for lateral adjustment on the rail and means for supporting the ends of two adjacent swifts, and means for locking each arm against pivotal movement, separately or in combination, as described and claimed in the patent in suit. This is not seriously contested by the appellee, whose principal, if not sole, contention is that the evidence as to the alleged prior uses of the patented device is insufficient to defeat the patent. In support of this contention, the appellees quote the oft-repeated declarations of courts, that the burden of proof as to prior use rests upon the defendant, and that every reasonable doubt should be resolved against him, and that courts require that the proof of prior use shall be clear and satisfactory. It is undoubtedly the duty of courts to exercise, as in nearly all cases they are careful to declare, the utmost caution in scrutinizing and considering the testimony offered to establish a prior use. *Courts have frequently taken the*

ground, under the particular circumstances of the case before them, that where a long time has elapsed since the alleged use, and the fact depends upon the fading recollection of a single witness, that an exhibit of the device or thing actually used must accompany the affidavit. There is, however, no hard and fast rule as to this. In this, as in other cases, the weight and effect of testimony must be passed upon, and a conclusion as to the existence of an alleged prior use will be reached if the evidence thereof is clear and satisfactory to the judicial mind. (Emphasis ours.)

"In the present case, we see no reason to doubt the testimony as to these alleged prior uses. The witnesses are shown to be men of experience and intelligence and there is no impeachment of their character. Their familiarity with the art and industry to which the patent in suit relates, is abundantly established. No bias or pecuniary interest is shown to qualify the force of their testimony. The time that has elapsed since the date of the facts testified to was not great—ten or twelve years. The witnesses were in the prime of life, and their testimony direct, positive and distinct as to the facts testified to. Seven exhibits of brackets were produced by them to illustrate the art as they knew it to exist. All but one of them were reproductions made for purposes of illustration. They are, however, so simple in character that it is impossible to believe that an ordinarily intelligent man could be mistaken as to their exact form and function."

In a similar case, Rodwell Sign Co. vs. F. Tuchfarber Co., 127 Fed., 138, 142, the Circuit Court of Appeals for the Sixth Circuit expressed the same views in the following language:

"Six unimpeachable witnesses testify to having, before the patent, either made and sold, or to having seen in public use, in the City of Cincinnati, door name-plates made in this same way. These plates

consisted of a name cut in a suitable block of wood or other material, the letters being recessed or concave. The obverse side of this recessed tablet was then placed against a plate of clear glass, and both enclosed in a silver-plated frame adapted to be attached to the outside of a door. That no two of these witnesses testify as to the same identical plate, and that none of these old plates are produced, is urged as ground upon which we should hold the anticipation not proven. We are not unmindful of the liability to mistake in oral evidence of an anticipation, and of the rule which requires that the evidence relied upon to overthrow the presumption of novelty should be of a most cogent character. Deering vs. Winona Harvester Works, 155 U. S., 286, 300, 15 Sup. Ct., 118, 39 L. Ed., 153; Amer. Roll Paper Co. vs. Weston, 59 Fed., 147, 8 C. C. A., 56. Nevertheless we cannot escape the conviction that this method of making door name-plates is established as convincingly as any such fact can be established where the original article is not produced. *So far as we can see, the witnesses are without bias or incentive to color their evidence. The probability of mistake is reduced to a minimum by the very simple character of the subject about which they testify.*" (Emphasis ours.)

In like case a learned English judge said:

"The evidence is what it is, and I am unable to draw such inferences as would dispose and get rid of that evidence if the evidence is in itself sufficient to prove anticipation."

Morgan & Co. vs. Windover & Co., 7 R. P. C., 131.

Early Work of the Department of Agriculture in the Treatment of Oranges With Boric Acid to Prevent Blue Mold Decay.

In 1904 when Dr. Powell, the man who made "careful handling" famous, was starting his work on blue mold

prevention, he was interested in a certain patented process for fumigating the fruit in the cars (R., I, 229, 234) and asked Dr. Gore of the Bureau of Chemistry to investigate it for him (R., I, 234). In the course of these investigations, Dr. Gore conceived the idea of trying other chemicals. It occurred to him at once that boric acid should have the same effect upon penicillium glaucum on oranges that it did on other foodstuffs. So experiments were conducted along this line with the assistance of W. M. Scott of the Bureau of Plant Industry, and the results carefully recorded. (A certified copy of Dr. Gore's notes were received in evidence as Defendant's Exhibit No. 9, R., II, 1475). Test oranges were wounded, the wounded tissue inoculated with cultures of penicillium glaucum, and these oranges dipped into boric acid solutions of varying strengths. These experiments proved conclusively that boric acid inhibits the development of blue mold. Dr. Gore testified (R., I, 229):

> "We got the inhibition or stopping of the germination of the spores of blue mold which were of course rubbed on the abraded surfaces and then the oranges dipped in boric acid solution and allowed to dry and we observed that in those fruits that had been so treated the mold was very slow in starting, it did not start for a good many days, whereas, in the control it went right off."

Here then was a complete conception of the great Brogden and Trowbridge invention followed by a perfect reduction to practice, all more than twenty years ago. Again we see how knowledge of the use of boric acid as a food preservative for other foods led easily and naturally to its use in preserving oranges from blue mold.

It is interesting to note that Dr. Powell himself was familiar with this work and kept in close touch with it (R., I, 231). Dr. Gore testified (R., I, 229):

"I reported the results of this experiment to Dr. Powell, and I believe also to Dr. W. A. Taylor. I remember that Dr. Powell noticed the presence of a few crystals of boric acid on the surface of the oranges and just at that time I might say there was a great deal of agitation against the use of any chemicals in connection with foodstuffs on account of the agitation in connection with the Pure Food Law which passed a couple of years later and Dr. Powell did not like the idea of anything suggesting that chemicals had been used appearing on a wrapper or on an orange and he rather deprecated the idea of using boric acid for that reason."

So the results of these experiments were never published, never given to the industry, for the simple reason that it would have been impolitic to have done so. The plaintiff would have us believe that the Department was ignorant of the toxicity of boric acid for blue mold on oranges and that careful handling was urged for want of something better. But we now see that this is not so, and that in fact Powell himself knew what boric acid would do but would not use this knowledge in deference to the Bureau of Chemistry.

Courts Found Claimed Process Inherently Wanting in Invention But This Conclusion Barred Collaterally.

In view of all this evidence the District Court concluded that viewed retrospectively "the claimed process would seem to be wanting in invention over the disclosures of the prior art" (R., I, 18).

But the Court then proceeded to say that it saw at some undisclosed place in the evidence such need and search for a blue mold remedy as "must stand as a bar" to the conclusion of non-invention unless prior uses were found to invalidate the process claims. After following the course of this circular reasoning, the

original conclusion of non-invention seems to stand unimpaired. But law and reason forbid that a conclusion inherently free from doubt shall be barred by any extrinsic evidence. The general rule has been set out frequently in cases relating to the construction of wills where the courts say that extrinsic evidence is not admissible to raise a doubt. It is admissible only where the doubt arises within the four corners of the will.

And in the patent law it has been pointed out frequently that such things as need, search and commercial success are not to be brought in to show invention where upon comparing the claimed process with the disclosures of the prior art it appears without reasonable doubt that the claimed process is lacking in invention over the disclosures of that art.

Decisions of Courts Below Based on Unwarranted Assumptions.

We have briefly summarized the evidence submitted by defendant to establish prior widespread knowledge and use of borax as a preservative for foodstuffs generally and for fresh fruits and vegetables in particular, including citrus fruit specifically. We have not enlarged further on the evidence submitted by defendant for the reason that as we have pointed out above, the lower Court specifically found this widespread knowledge and use to be established, and this finding of the District Court was in substance approved by the Court of Appeals, but both Courts refused to follow this finding of fact with what seems to us the inescapable conclusion that the Brogden patent was invalid, on the basis of certain collateral assumptions, and it is in the making of these assumptions and the effect given to them that the principal error of the lower Courts is found.

It is our position that these assumptions are in error, first, because even if warranted they are insufficient to set aside the plain evidence of anticipation submitted by the defendant, and second, because there is no evidence to support the Court's assumptions, but on the contrary they rest solely on inferences which an analysis of the evidence show to be unwarranted.

These assumptions are:

First, that there was a crying need and a long-felt want for a further remedy against blue mold decay and that there was a long continued, extensive and exhaustive search for a preservative treatment such as disclosed in the patent. On the contrary, the evidence shows that from 1905 right down to the date of the trial, the efforts of the Department of Agriculture in promoting improved methods of picking and handling fruit had been successful in reducing the loss from decay to a small per cent.—even a fraction of one per cent. of the season's crop. The 800 or more pages of documentary evidence admitted by the Court under the guise of establishing the *res gestae* as to what the art was being taught, shows conclusively the success attending the Department's efforts in establishing improved scientific packing house methods and the plaintiff's leading witnesses state without qualification that where such methods are followed the loss through decay is insignificant. Except for the work done at the Department of Agriculture by Gore and Scott defendant's witnesses, with borax, which work demonstrated as long ago as 1904 the efficacy of the borax treatment specifically for inhibiting the growth of the blue mold spore on citrus fruit, there is no evidence of any experimentation looking toward the commercialization of such a remedy.

Second: The assumption that the process of the patent in suit because of its outstanding merit has resulted in

its general adoption by the industry. The evidence is that such use of the process as has occurred was not due to the merits of the alleged invention, but was the result of the aggressive commercial activities of the plaintiff company.

Third: The assumption that the recommendation of the Department of Agriculture of the borax treatment was withheld because it was considered ineffective, and not because of the anti-borax activity of the Department of Agriculture in connection with the Pure Food Law.

UNWARRANTED ASSUMPTION OF LONG-FELT NEED AND SEARCH FOR REMEDY.

If this patent is to be supported by collateral findings, facts that give such support should be established by direct and substantial evidence and not assumed by remote inference.

Plaintiff's First Grade of Available Evidence Not Used.

A most persuasive reason to conclude that the facts of need and search have not been supported properly appears when it is seen that the plaintiff failed to avail itself of its only adequate source of competent evidence. The plaintiff called thirty-one witnesses the majority of whom were of long experience in the citrus industry and shown to have been in a position to know the fact if there had been any such long-felt need and any such search for a remedy. Plaintiff did not examine a single witness on this subject, and William S. Hart (infra) the only one of the plaintiff's witnesses who testified in such manner as to indicate what he knew on the subject, testified most strikingly to facts that were abso-

lutely inconsistent with the theory that the industry felt any such need or that it or anyone in its behalf was engaged in any such search for a remedy.

Plaintiff's Publications Showed Antithesis of Search.

Moreover, for the stated purpose of showing the teachings of the prior art the plaintiff offered a great mass of publications comprising about 850 pages of the printed record which consistently throughout go to show that with the aid of experts of the United States Department of Agriculture there had been worked out in the industry and generally accepted a system of careful handling of oranges that was a pronounced commercial success as based on the avoiding of injuries to the rind of the orange without which blue mold cannot attack the orange.

Because of the large volume of this hearsay which is pointed to as containing evidence of need and search, but which contains no such evidence even if it would be competent for that purpose, as brief a digest of these publications as may be possible has been made and for convenience of reference is printed as an appendix to this argument.

It will be seen that in every case where a witness for the plaintiff touched in any way upon orange packing house practices he indicated that ever since the adoption of the standardized careful handling practices that had been worked out more than twenty years ago under the leadership of G. Harold Powell, the industry had relied primarily and still relies primarily upon the avoiding of injuries to the fruit as the fundamental way of avoiding blue mold, whatever might have to be done for the prevention of such other kinds of disease and decay as attack sound oranges without being limited to unsound oranges as in the case of blue mold.

Plaintiff's Leading Expert Negatived Theory of Search.

William S. Hart was offered by the plaintiff as a student of every phase of the orange industry for fifty years, who owned and operated his own large packing house (R., I, 528) who had studied the problems of the orange industry in the citrus districts of four continents and various islands of the sea (R., I, 529) who for twenty-four years had spent a part of almost every year in these travels; and was a business man of wide experience, a director in lots of concerns, with interests throughout the entire State of Florida and managing millions of business (R., I, 542). Mr. Hart had been either secretary or treasurer of the State Horticultural Society of Florida for thirty-two years beginning with its second meeting (R., I, 538). In all of the thirty-six or thirty-eight years of the existence of the Florida Horticultural Society he had missed only four meetings (R., I, 540).

The plaintiff not only offered the extended testimony of Mr. Hart (R., I, 527-550) but also included in the publications offered to show the teachings of the prior art, held out formal papers and informal sayings of this witness from the reported proceedings of the Horticultural Society,—so that we have before us both his testimony and his teachings.

In his testimony as a witness in the present case, Mr. Hart made it clear that in his practices of a lifetime covering the entire period of the development of the Florida orange industry he gave no thought to any preventive of blue mold decay except careful handling (R., I, 535) with the use of plain water for washing (R., I, 533) and that he "never had any particular trouble with blue mold" (R., I, 544). The published teachings of William S. Hart offered by the plaintiff as a part of its showing of what was being taught in the industry, go

back to 1907 (Pltff. Ex. No. 7, R., I, 649). There in a report of a meeting of the Florida State Horticultural Society, Mr. Hart appears as a crusader for careful handling, endorsing and emphasizing out of his own experience what had been said at the meeting by Lloyd S. Tenny, government pomologist, on the subject of careful handling. For several years Mr. Tenny had been working in California as assistant to G. Harold Powell in his careful handling studies and teachings.

Next in the proceedings of the Florida State Horticultural Society for 1908 appears a lengthy paper by William S. Hart (Pltff. Ex. No. 9, R., I, 755) in which he reviews and thoroughly endorses Powell's work and from his own experience adds much detailed advice on what he holds out as the essential and exclusive practice in the preparation of oranges for the market. This paper ends with a copy of Mr. Hart's eighteen posted rules for his pickers and packers, most of which relate specifically to details of careful handling. Mr. Hart summarizes with this striking statement:

> "The lesson then, that I would teach is carefulness that should run like the red strand in the cordage of the English Navy, through all our operations and relations with our fruit" (R., I, 763).

In the proceedings of the same Society for 1909 Mr. Hart reports on a visit to the California citrus districts in company with Powell. He again stresses the matter of careful handling (R., II, 821). Again at the Society's annual meeting in 1910 where Stubenrauch presented the latest developments and results in the matter of careful handling, Hart again is quoted as endorsing all that was said (R., II, 850-852).

Hart apparently was absent in 1911. In the proceedings for 1912, H. J. Ramsey of the Department of Agriculture makes an exhaustive report on the careful han-

dling work in California and Florida. He teaches that work of this season covering practically the entire citrus district has shown that almost without exception the decay "is due to rough and more or less careless handling at time of picking and packing," and that "it has been fully demonstrated that fruit can be carefully picked and packed in a commercial way so that it will carry to the market in sound condition and hold up for a sufficiently long period to allow of its distribution and consumption", (R., II, 903). In striking contrast to the conception of 30% to 40% decay that influenced the conclusion of the District Court (R., I, 18) and the Circuit Court of Appeals (R., I, 574) this 1912 report from the Department of Agriculture shows an average blue mold decay in seventy-nine test shipments from Florida in the season of 1910-11 ranging under careful pick and pack from 0.6% on arrival to 1.9% three weeks later, as against 7% on arrival to 14.2% three weeks later under commercial pick and pack; the averages for sixty-five test shipments from thirty-seven houses in 1911 and 1912 being under careful pick and pack 0.6% on arrival and 2.2% three weeks later, as against 4% on arrival and 14.2% three weeks later under commercial pick and pack.

It is to be noted that the plaintiff here shows that as early as 1912 the United States Department of Agriculture was teaching results from careful handling, as satisfactory as those claimed by the plaintiff's witnesses at the trial as secured by adding to the long-taught practice of careful handling the Brogden Company's two highly advertised Brogdite and Brogdex processes under which they assumed to take oranges from which injuries have been eliminated for the most part by careful handling and add to them an antiseptic coating of borax and a further preservative and protective coating made up of a composition of paraffin, natural oils and waxes of

the orange tree, and certain undisclosed antiseptic solvents (R., II, 1467).

After this presentation by Mr. Ramsey to the Florida State Horticultural Society in 1912, Mr. Hart is reported as seconding a motion recommending the growers of Florida to adopt the full careful handling program as presented by Mr. Ramsey, and to request the United States Department of Agriculture to allow the careful handling of work of Mr. Ramsey and his co-workers to continue (R., I, 921).

Circuit Court of Appeals Thirteen Exemplars Had No Connection With Search.

The most direct statement in either opinion as to what led to the strong declarations made by both Courts with respect to need and search is the statement of the Circuit Court of Appeals which names thirteen men as the specified authorities who were seen by the Court to have been engaged from 1902 to 1923 "earnestly and laboriously in a concerted and continuous effort studying the problem of finding something to prevent blue mold decay" (R., I, 574).

In the absence of any findings of primary facts by the Circuit Court of Appeals, the most direct way of testing the soundness of this conclusion of search seems to be to turn to the Record and learn what it shows as to the work of the thirteen men named as "eminent horticulturists and pomologists" engaged in that long continued work. If it is found that the Circuit Court of Appeals was confused as to what the evidence really shows as to the work of these men, and that they were not engaged in any such search, then the conclusion of the Court is left without any clearly pointed out basis.

Of the thirteen named workers, two only testified in the case.

William S. Hart was one of the two who testified. As seen elsewhere in this argument his testimony throughout, and his published writings show that he never engaged in any such search and never felt the need of any new mode of prevention. He relied on careful handling of the fruit accompanied by thorough washing in plain water (R., I, 533, 763) and he never had any substantial trouble with blue mold (R., I, 544). This witness owned and operated a large packing-house for many years, including the period from 1902 to 1923, referred to by the Court as the period of the alleged search. He was qualified as an important business man, a leader in the citrus fruit industry and a world student of its methods.

Lee B. Skinner, the second and last of the thirteen named experts to testify, was not asked about any search and did not testify with respect to any such matter (R., I, 65).

The remaining authorities named by the Court (R., I, 574) were Powell, Tenny, Woodworth, Dyer, Fawcett, McKay, Sadler, Ramsey, Mann, Holton, Stubenrauch. None of these men were called. No explanation was made as to the absence of any of them, or whether living or dead, except perhaps in the case of G. Harold Powell who died some years ago.

We have no evidence as to the activities of any of these men except for any mention that may be found by way of hearsay in some of the eighty or more publications offered by the plaintiff to show the teachings of the prior art. None of this hearsay portrays a single one of these men as engaged in any search for a blue mold remedy.

G. Harold Powell is seen throughout as a crusader for careful handling, giving no sanction to anything else. He taught that this was all sufficient. His only reference to anything else was in 1905 when as Dr. Gore testified he objected on grounds of policy to the preserving

of oranges with borax (R., I, 229) and in 1908 when he wrote: "If it were possible to kill the blue mold in the washing tank, it would place a premium on the shiftless management of the groves and on the rough, careless handling of the fruit" (R., I, 709).

Lloyd S. Tenny was associated with Powell in the careful handling work in California and continued it in Florida. He is quoted in Plaintiff's Exhibit 7 (R., I, 649), Exhibit 10 (R., II, 766) and Exhibit 13 (R., II, 808). In no place is he quoted or referred to as engaged otherwise than in carrying on the careful handling work to which the United States Department of Agriculture was committed completely.

There is not a word of evidence in the case, hearsay or otherwise, to connect Mr. Tenny with any search for a blue mold remedy. In 1907 the "careful handling" practice had been exhaustively studied and worked out to the point where the Bureau of Plant Industry had transmitted to the Secretary of Agriculture for publication the exhaustive report prepared by G. Harold Powell, assisted by Stubenrauch, Tenny, Eustace, Hasford and White (Pltf.'s Ex. 8, R., I, 664) which has become the classic of the industry on the subject of the prevention of blue mold of oranges.

Tenny's work everywhere appears in the evidence as devoted singly to the support of that program.

C. W. Woodworth appears nowhere in the case except in 1902 where he appears as author of a bulletin issued by the University of California on the subject "Orange and Lemon Rot" (R., I, 604).

This is a scientific paper discussing the mold fungus as a common cause of rot.

John Francis Dyer. The reference to this man as one of the eminent authorities whose long and fruitless work was persuasive evidence of a long, unsuccessful search for a blue mold remedy is far fetched to the last degree.

He appears nowhere in the evidence except as a writer for the "Review of Reviews" who in 1909 wrote a popular article somewhat sensational in tone reviewing Powell's work on the careful handling of fruit to avoid injuries (R., II, 777).

H. S. Fawcett. Plaintiff's Exhibit 14 (R., I, 835) contains a paper read by H. S. Fawcett before the Florida State Horticultural Society in 1910, limited to a discussion of stem-end rot (R., II, 854), and in Exhibit 15 (R., II, 864) as addressing the Florida State Horticultural Society in 1911 on the subject of stem-end rot and gummosis of citrus trees. His only reference to blue mold is that he had found that some chemicals used in treating for stem-end rot and gummosis, fungi of citrus trees, seemed to increase the amount of blue mold decay "due probably to injury to the rind" (R., II, 870).

Fawcett is quoted for the second and last time as one of the authors of a bulletin of 1911 from the University of Florida on "Diseases of Citrus Fruits." The authors discuss, *inter alia*, blue mold rot and say that the approved method of prevention is careful handling in avoidance of the injuries upon which the mold follows (R., I, 899). Nowhere is there an intimation that Mr. Fawcett was of opinion that any other mode of prevention was needed, much less that he was searching for any.

A. W. McKay appears simply as addressing the Florida State Horticultural Society in 1913. The text of his speech was as follows (R., II, 936):

> "At the end of last year it was felt that six consecutive seasons of experimental work had demonstrated thoroughly the causes of blue mold decay in Florida oranges, in transit and on the market, and the value of careful handling in preventing such decay. If any further demonstration was needed, or is needed, it is furnished on a commercial scale by an increasingly large number of growers and shippers of citrus fruit who have adopted careful han-

dling methods. There are now packing houses in the State whose records are conclusive evidence that it is not only possible but practicable, to handle oranges and grapefruit so that they will arrive on the market with little or no decay, even under the most unfavorable weather conditions."

Clearly this negatives the idea that Mr. McKay was engaged in any search for a new remedy. He was simply furthering a program laid down and accepted as early as 1907.

Mr. McKay's name is found in only one other place. He is named as an assistant in the "careful handling" work reported on in a Department of Agriculture bulletin (Pltf.'s Ex. 24, R., II, 967).

O. W. Sadler. There are two Sadlers named in the plaintiff's exhibits as orange growers taking part in the discussions at meetings of the Florida State Horticultural Society.

The name J. H. Sadler occurs once in the brief statement that in his neighborhood decay had been reduced to 2¾% by careful handling (R., II, 961).

O. W. Sadler appears as a physician and orange grower of Mt. Dora, Florida. He is mentioned as participating in discussions at the annual meetings of the Society in 1913, 1914 and 1915. He appears throughout as in thorough agreement with the Department of Agriculture's recommendations for careful handling in avoidance of injuries as the logical way of preventing the growth of blue mold. The only other point made by Dr. Sadler was to emphasize the importance of having oranges thoroughly dry before packing. He summed up his views on this point as follows:

"Our motto at Mt. Dora is: We will pack no fruit that is damp. I have carried fruit in my office in the North in May and had it lay until October, because I kept it dry" (R., II, 953).

The plaintiff's other quotations from Dr. Sadler's remarks are found at R., II, 949, 961, 1057 and 1085.

H. J. Ramsey was an employee of the U. S. Department of Agriculture engaged exclusively in promoting the work on the careful handling of oranges, so far as shown in plaintiff's case. He first appears as addressing the Florida State Horticultural Society in 1912. He confined himself to a review of the Government work in Florida in promoting the better handling of citrus fruit. The text of his discussion was as follows:

> "It has been fully demonstrated that fruit can be carefully picked and packed in a commercial way so that it will carry to the market in sound condition and hold up for a sufficiently long period to allow of its distribution and consumption" (R., II, 903).

In this connection Mr. Ramsey said that their Florida investigations extending over six seasons and covering practically the entire citrus district, had proven conclusively "that almost without exception the decay occurring in transit and while holding on the market is due to rough and more or less careless handling at the time of picking and packing."

Mr. Ramsey's name next appears in Plaintiff's Exhibit No. 24 (R., II, 967) as one of the authors of U. S. Department of Agriculture Bulletin No. 63 devoted exclusively to this same subject of careful handling. He appears in the same way in Plaintiff's Exhibit No. 32 as author of a farmer's bulletin issued in 1915 and devoted to the same subject (R., II., 1097).

Mr. Ramsey's name next appears as author of a similar article which appears in Bailey's Standard Cyclopaedia of Horticulture, published 1917 (R., II, 1145).

Thereafter Mr. Ramsey is quoted as Field Manager of the California Fruit Growers Exchange. Plaintiff's Exhibit No. 40 (R., II, 1195) is Mr. Ramsey's bulletin

of 1921 urging the importance of careful handling and pointing out recent slackness in that regard as bearing an increased decay. Plaintiff's Exhibit No. 62 (R., II, 1329) is Mr. Ramsey's bulletin to shippers, calling attention to the advisability of using Blue Stone in the wash water on account of the prevalence of brown rot. This circular was dated December 20, 1921. On the next day Mr. Ramsey sent out a second circular pointing out certain abnormal conditions tending toward the increase of decay and calling, therefore, for extreme care in the way of careful handling. He referred at the same time to the previously recommended use of Blue Stone for brown rot and cautioned the shippers to remember that the Blue Stone could not be depended upon to kill blue mold spores (R., II, 1331).

Plaintiff introduced further California Citrus Exchange circulars of January 4, 1924, and April 8, 1924, which are not signed. They again refer to unusual conditions, including much rain and hot winds, and again urge great care in the handling of the fruit in avoidance of blue mold. They forecast that much brown rot will follow the rains and advise the shippers to be ready with Blue Stone as a disinfectant against brown rot (R., II, 1333, 1337).

C. W. Mann is quoted in Plaintiff's Exhibit No. 25 (R., II, 1051) as author of a bulletin of 1914 on the handling of Porto Rican citrus fruit and the causes of its decay. He repeats the old teachings with respect to blue mold and says:

> "It is apparent, therefore, that the control of blue mold decay is primarily dependent upon the improved methods of picking, packing and transporting the fruit."

The only other quotation from C. W. Mann is in the form of his report on the relation of washing to decay

of navel oranges as investigated by him in the season of 1914-1915 (R., II, 1093). This report simply emphasizes the importance of drying the oranges before they are wrapped in tissue wraps.

J. C. Holton appears as author of a bulletin issued by the State Plant Board of Florida in 1918 on the general subject of "Sanitary Precautions in Grove and Packing House Operations." Mr. Hilton was one of the State Plant Board inspectors and in this bulletin discussed at length the various kinds of sanitary precautions that were coming to be insisted upon by the State Plant Board to prevent the spread of the many citrus fruit pests and diseases. There is not the slightest warrant for holding Mr. Holton out as an authority who was engaged in the work of trying to discover a new means of preventing blue mold (R., II, 1164).

A. V. Stubenrauch is quoted in a number of the plaintiff's exhibits. He is referred to as successor to Mr. Powell, in charge of fruit transportation and storage investigations. Wherever he is quoted he is shown as devoting himself to the prosecution of the careful handling work, and nowhere is he shown as engaged in any search for any other remedy. He is first quoted as addressing the Florida Horticultural Society in 1910, reviewing the work of the Department of Agriculture in Florida for the last three seasons. He recalls the fact that blue mold is a saphrophyte living and growing on dead tissue and requiring moisture and warmth.

Mr. Stubenrauch gives a very convincing presentation of the adequacy of careful handling, including the proper drying of the fruit (R., II, 835). Mr. Stubenrauch's name next appears as author of a correspondence school leaflet on the same subject of careful handling as related to the prevention of blue mold (R., II, 922). He next appears as the author of a paper on Fruit Handling and Precooling Investigations, read before the Washington

State Horticultural Convention of 1912. It presented a summary of what had been learned as the result of the careful handling work first undertaken by J. Harold Powell. The paper then went on to give results of investigations with respect to the importance of careful handling of the deciduous fruits of Washington, Oregon and California (R., II, 926). Mr. Stubenrauch is quoted last as one of the authors of U. S. Department of Agriculture Bulletin No. 63 on the subject of careful handling of Florida Oranges (R., II, 967).

The conclusion of this whole matter is that the Circuit Court of Appeals to support its finding of a long, unsuccessful search pointed to the testimony of one witness who thoroughly negatived the idea of search and also the idea of need, although not questioned by the plaintiff with reference to search; and the testimony of a second witness who was not asked about search and did not suggest it; and further pointed to hearsay from eleven other persons, one a journalist, one a plant board inspector, one a physician-orange grower, none of the three ever engaged in such a search; a fourth a scientific man who wrote on blue mold in 1902 with no reference to any such search, and never is heard of again; and the remaining seven, United States Department of Agriculture workers quoted as devoted exclusively to careful handling work, so far as their work related to blue mold. And careful review of all of the evidence in the case fails to show any evidence of search that could be deemed to support this conclusion so vital to the Court's decision.

After the general nature of the plaintiff's patent activities became noised around, through the plaintiff's claims for its mysterious citrus fruit preservatives, Brogdite and Brogdex, statements were made that have been brought in by the plaintiff as a part of its great volume of hearsay, designed to show the teachings of the prior

art. But they consist entirely of declarations of persons seeking other somewhat analogous patents (R., II, 1256, 1284-1307) and declarations coming from the California Fruit Growers Exchange in connection with its original show of interest in the plaintiff's process, and its subsequent denial of recognition when it was learned that "Brogdite" was in reality borax (R., II, 1312-1329). And this hearsay, all of the nature of self-serving declarations of parties to disclosed controversy, moreover goes only to the point that in early years an effort was made to find something to kill the spores in the wash water, and the further point that when "Brogdite" and "Brogdex" appeared on the horizon as alleged preservatives to be added to fruit by way of coatings, others began to give attention to the same project of preserving fresh fruit which had been set aside in the days of great public agitation against the adding of preservatives to articles of food.

UNWARRANTED ASSUMPTION OF COMMERCIAL SUCCESS.

As has been seen to be true with respect to the other points of this case, the evidence for the plaintiff itself denies weight to the matters of adoption and utility. To start with, the plaintiff has shown that for the most part such patronage as it secured was patronage of its unique plan for enabling the packing house operator to have his packing house equipped, maintained and furnished with a good part of its supplies without any investment of capital on the part of the operator or owner of the packing house, with a license for the use of Brogdite and Brogdex thrown in. Under this plan all that the packing house man had to do was to pay a per box royalty of 6½¢ for each packed box of oranges above the grade of culls up to 400,000 per month, and a royalty of 5½¢ per packed box for the excess.

This paid the rental of the packing house equipment, paid for the maintenance of the equipment in good repair, paid for all materials other than water used in the applying of Brogdex and Brogdite, included also the royalty for the use of the two processes known by the trade names Brogdite and Brogdex. The packing house equipment furnished under this contract remains the property of the Brogdex Company (R., II, 1342-1352).

All of the plaintiff's witnesses who testified to alleged benefits from the use of Brogdite (borax) treatment, used both the Brogdite and the Brogdex treatments concurrently, with the exception of Sidney O. Chase. Chase & Company began the use of borax as a preservative at the suggestion of the United States Department of Agriculture in the fall of 1924, and having used it in ten or twelve of their houses without license for more than two years, took out a license under the Skinner Machinery Sales Company some time after that company had secured the exclusive rights for Florida (R., 1, 62, 63, 108). And although in Mr. Chase, president of one of the oldest and largest orange packers of Florida (R., I, 61, 70) the plaintiff had a witness who had been using borax consistently apart from the plaintiff's waxing treatment, for two years prior to the trial, the plaintiff contented itself with having Mr. Chase offer a letter from his general manager showing decay figures for eleven packing houses for a period of three weeks (R., II, 1340) ending December 14, 1926, just prior to the trial of this case which began January 31, 1927. Mr. Chase testified that he did not know the precise source of these figures and that he did not have figures for any other period; also that the decay varies much according to weather conditions and other conditions (R., I, 64, 65). The period selected for this three weeks' decay showing was a hurricane period with all of these packing houses more or less affected. Mr. Chase testified that the Noca-

tee House shown in the tabulation was one house that used both the Brogdite and the Brogdex and that while its fruit for the period had been more or less scarred and blemished by the effect of the wind, the fruit carried in good shape (R., I, 64). If this tends to prove anything, it tends to substantiate what is manifest without proof, that alleged benefit from two highly praised processes combined can not be attributed to one without regard to the other.

As a part of the whole picture of the case it may be noted that even with all of the plaintiff's much advertised claims, with all of the mystery surrounding the trade names Brogdite and Brogdex, and all of the attractiveness of the plaintiff's plan for furnishing a packing house owner or operator with equipment, maintenance and supplies and patented processes without requirement of capital investment, there is little showing in the case of unbiased adoption and, except in the case of Mr. Chase, who presumably preferred to pay a royalty rather than to have a law suit, there is no showing that any one recognized the plaintiff's borax patent as an independent entity.

Mr. Brogden in his testimony kept away from this question of utility and adoption (R., I, 99). And Mr. Millar, the secretary and treasurer of the company, did likewise (R., I, 93). The California witnesses who had any experience with the borax process were Knox (R., I, 28), Wolstencroft (R., I, 42), Jacobs (R., I, 54) and Pierce (R., I, 57) who were packing house managers for San Antonio Fruit Exchange. And Cartwright (R., I, 73), Hendricks (R., I, 80), Ritchey (R., I, 84) and Earley (R., I, 86) packing house managers for the Mutual Orange Distributors of California.

Mr. Knox, who was general manager of the San Antonio Fruit Exchange, testified that the seven packing companies of the San Antonio Fruit Exchange that used the

dual Brogdite-Brogdex process became interested with Mr. Brogden in his Brogdex treatment activities in 1922, and that each of the seven advanced money to Mr. Brogden or his company and later got it back by way of a refund or allowance when they put in the Brogdite system (R., I, 27, 41).

Mr. Earley, who was general manager of the Mutual Orange Distributors, testified that they likewise took part in assisting in the development of the paraffin treatment, loaning Mr. Brogden $6,000 in the prior days "to be returned out of the money that we would pay if it did work."

That seems to be the extent of recognition granted to the patented process in California, a recognition so bound up with other things as to be meaningless in itself. The only other measure of recognition appears in the testimony of Bronson C. Skinner of the Skinner Machinery Sales Company, which took the exclusive rights for Florida on the different processes and appliances of the Brogdex Company. Mr. Skinner's company is now known as Florida Brogdex Distributors, Inc. (R., I, 106). Mr. Skinner testified that his company carries on the same manner of equipment leasing and process licensing business in Florida as is shown to have been carried on in California by the Brogdex Company. Mr. Skinner testified that twenty-seven Florida packing houses had been licensed up to the time of trial. At least thirteen of them were the Chase & Company houses which began the use of borax before they learned of the Brogden & Trowbridge patent. This leaves about fourteen packing houses in Florida recognizing the Brogdex System. None of them give any separate recognition to the borax treatment (R., I, 108). The source of these Florida rights appear in the written grant to Mr. Skinner's company from the Brogdex Company covering the use of the "Brogdex System machinery and equipment" and the

Brogdite and Brogdex patented processes intended to be used in connection therewith (R., II, 1352); and Mr. Skinner exhibited the form of license agreement (R., II, 1363) and form of lease agreement (R., II, 1372) under which the Florida sub-licensees operate.

While there was testimony of no definite character to the effect that there was considerable use of borax in California and Florida on the suggestion of the United States Department of Agriculture sent out in 1924 before the disclosure resulting from the subsequent publication of the Brogden and Trowbridge borax patent, there is nothing of consequence with respect to the results from these unlicensed uses, and nothing in connection with them to be given weight as endorsement of the patented process. It is evident that in such a matter as the preparing of fresh fruit for the market where not only blue mold but also many other destructive organisms and diseases have to be looked out for, methods and modes will vary from time to time and trial will be made of any apparently logical, simple and cheap procedure.

With the United States Department of Agriculture suggesting a trial of such a cheap, well known and well tried preservative as borax, it could not be otherwise than that such suggestion would meet with a favorable reception.

The Period of the Brogden and Trowbridge Patent Shows No Substantial Departure From What Went Before.

"Careful handling" continues to be the cardinal principle in the preparation of fresh fruit for the market. The latest circular of the California Fruit Growers Exchange offered by the plaintiff was one of January 4, 1924, addressed to all orange shippers. This circular

apparently was offered by the plaintiff to show the continued adherence to the principles of careful handling in the avoidance of blue mold, as an essential teaching of the industry. The same circular points out the dangers from brown rot. As the preventing of injuries will not prevent brown rot, the circular advises the use of Blue Stone in the soaking tank as a preventive of brown rot (R., II, 1336).

And as pointed out elsewhere, none of the plaintiff's witnesses at the trial, from Reginald L. Knox, the first expert witness from California, who outlined their customary careful handling practices (R., I, 26) to William S. Hart, the last expert witness from Florida, who had practically 100% successful experience with careful handling (R., I, 544) showed the slightest dissent from the proposition that appears throughout the plaintiff's case that the well-standardized and well known practices of careful handling in avoidance of injuries have constituted for years and still constitute the main and reasonably adequate reliance of the industry as a preventive of blue mold.

Some of the California witnesses made general claims that by using borax as a preservative on oranges and then adding the patented Brogdex coating of paraffin and other materials, they can ship overripe and bruised oranges picked up from the ground, and that the application first of Brogdite and then of Brogdex prevents shrinkage to such an extent that they can pack their orange boxes with less bulging of the flexible top and thereby sell a box of oranges with fifteen or twenty pounds less weight of oranges than formerly. But interesting as these claims are, no means is provided for dissociating the alleged effect of the Brogdite from the effect of the Brogdex. And even if these claims had any relevancy, examination would show that they lack reasonable circumstantial support, particularly in view of the inherent doubtfulness of their quality.

The most that the Courts below were able to see in the brown patent was a process for treating any oranges that happen to be wounded in spite of the continued application of the best manual handling practices. If the plaintiffs had devised a novel way of finding those wounded oranges and a novel way of treating their wounds, they probably would have had a good patent. But they did neither. And the very most that we have before us is an obvious supplement to the general means of prevention on which the industry rests. It has been indicated and will be shown further that this supplement involves nothing of novelty.

The Courts below gave a deep meaning to what was merely high pressure publicity, skillfully and effectively applied.

After spending $225,000 in fruit treating and preserving activities in Florida in 1922 (R., I, 31) Brogdex introduced the San Antonio Fruit Exchange and the Mutual Orange Distributors of California in his claims, finished up to this time in his wax coating which he held out in twenty one different claims as a miraculous preservative keeping the fruit indefinitely, preserving the natural taste and freshness, and serving as a sterilizing agent in curing processes and of the fruit (R., II, 1056-6). Then with $600,000 additional secured from various California sources including money borrowed from his future licensees, San Antonio Fruit Exchange and Mutual Orange Distributors, he pressed the promotion of various patents, some of which are referred to in the specifications of the brown patent, and the promotion of his packing house equipment manufacturing and leasing plan, and is shown by the plaintiff as shortly having interested the general manager of the California Fruit Growers Exchange in his claims. At this point the plaintiff undertakes to prove a revolution in the method of preparing oranges for the market but instead of sub-

mitting the patentees to examination and cross examination on this subject, the plaintiff offered a letter from E. G. Brandt, general manager of the California Fruit Growers Exchange, dated June 20, 1924, including a report from the Field Department of the Exchange upon Bowdite and Brogden tests (R., II, 1312).

While the plaintiff's exhibits were offered and only competent in so far as they were relevant and material to the teachings of the prior art, this California Fruit Growers Exchange material in its broadest aspect would show nothing except that Mr Brandt was led along by the glamour of the Brogden and Bowdite publicity to the point of trying out the compositions laid out as novel under these high sounding names, and secured results that seemed favorable (R., II, 1312). Mr Brandt's statement that nothing had been found to kill the blue mold spores in the wash water without injuring the fruit may be competent as a part of the teaching of the prior art, but what he and his Field Department were led to say with respect to the utility of Brogden and Bowdite has no evidential value. Plaintiff offered a later letter and report from Mr Brandt (R., II, 1307) in which he recommended a trial of borax in the wash water upon the suggestion of the United States Department of Agriculture. This material also seems to have little bearing one way or the other, any more than does a further California Fruit Growers Exchange circular offered by the plaintiff (R., II, 1229) which recommends the use of Blue Stone (copper sulphate) in the wash water as against brown rot fungus which was then particularly prevalent. This last circular was under date of December 20, 1921, and the plaintiff further offered a circular sent out the very next day containing a warning not to rely upon the Blue Stone in the wash water to kill the blue mold spores, but to continue to give the very greatest care to the avoiding of injuries by careful handling so as to give no access to blue mold (R., II, 1231).

The other evidence offered by the plaintiff in an effort to show a revolution in orange treatment at this time consists of seven patents applied for from July 9, 1925, to July 25, 1926, and dedicated to the public, by Fulton, Bowman, Barger and Hawkins, four workers in the United States Department of Agriculture (R., II, 1284-1307). It is reasonable to assume that these public servants were spurred into this activity by learning that the Patent Office had granted this present patent on the use of borax, a point that must have struck the Department of Agriculture with much force in view of its having so recently sent out to the citrus industry a general suggestion for the use of borax in the wash water.

Akin to these patents is Plaintiff's Exhibit No. 49, a paper prepared by H. R. Fulton, one of the Government patentees (R., II, 1256) and Plaintiff's Exhibit No. 50, a paper prepared by William R. Barger and Lon A. Hawkins, Government plant physiologists and two of the patentees named (R., II, 1265). These papers as well as much of the other material offered by the plaintiff is not technically a part of the prior art. All of the so-called teachings of these papers and these patents are controversial in nature and subsequent to the disclosures of the Brogden and Trowbridge patent which was published March 10, 1925. The defendant in this case is not to be bound by hearsay declarations made subsequent to the event in issue. But even if these declarations were competent evidence in favor of the plaintiff they would be of little weight. There is nothing in them inconsistent with the thoroughly established fact that down to the very time of trial the whole orange packing industry was placing full and just confidence in its well-established practice of avoiding blue mold by avoiding the injuries that give access to blue mold; and that the industry was well taught not to let down in the careful handling of the fruit with the thought that something could be put

in the wash water that would kill the spores that otherwise might attack such oranges as were wounded.

In his paper of April, 1925, Fulton is quoted as saying:

> "For a long time fruitless search has been made for a satisfactory chemical agent that will control these rots" (R., II, 1257).

A careful student of the record in this case will see that what was meant was that many years before, trials had been made which showed that the actual killing of the blue mold spores was out of the question without using a strong chemical that would injure the fruit. The plaintiff's evidence shows that that fact was ascertained and generally taught as early as 1908 (R., I, 709). There is no evidence that any one ever pursued that subject further and this quoted statement from Mr. Fulton and his other quoted statements after the granting of the Brogden and Trowbridge patent and at a time when Fulton was engaged in disputation bearing on the existing patent situation involving not only the Brogden and Trowbridge patent but also the Department of Agriculture patents that were being sought, are of such hearsay nature that they are not entitled to any weight on either side of the case.

If the statement quoted with respect to fruitless search, were to have any consideration it would be marked that it is followed immediately by a further statement that the recent investigations of the Bureau of Plant Industry were along an entirely different line. That is, the investigation provoked by the Brogden and Trowbridge claims simply went back to the old-time method of preserving the oranges by a mold-resisting application rather than trying to safeguard them from attack by killing the spores with which the oranges were apt to come in contact.

Theory of Invention Finds No Substantial Support in Any Showing of Long-Continued Expenditure of Effort or Money in the Making Up and Developing of the Process.

William R. Millar, secretary and treasurer of the plaintiff company, showed that the company had spent large amounts in its machinery and equipment business based on the plan of leasing packing house equipment with the right to use a patented coating for oranges called Brogdex; that they decided that they needed something more to hold out as controlling blue mold decay; and that they employed chemists who promptly recommended borax (R., I, 96, R., I, 586, R., II, 1342).

Mr. Millar's testimony on the development of the borax process stops there except that he says they went on to spend large sums of money in their business with nothing to show that any of it was spent on this borax patent. The patentees were Ernest M. Brogden and Miles L. Trowbridge. Presumably both of them knew how long it took them to think of borax when they were asked to suggest something to apply to oranges to prevent mold, and presumably both of them knew how long it took them to think of soaking inoculated oranges and control oranges in various strengths of borax solution, and to make trial of this and note the results, which is just what Gore and Scott did, and just what it would seem any one would do who wanted to test out the efficacy or borax or any other known preservative. If there was any other thing to be done in experimenting with borax as a preventive of mold in the light of the food preserving practices of fifty years or more, these patentees must have known what other things they had to do or saw fit to do by way of investigation. Since Miles L. Trowbridge was not called or his absence explained, and since Ernest M. Brogden was called and testified and was not examined on this

subject, it is a fair presumption that neither of them did anything in developing this alleged investigation beyond making the very simple and obvious tests that they have sought to crystallize into commercial practice under the specifications and claims of their patent, all of which boil down to the soaking of an orange in a solution of borax. And if the developing of the theory and practice of impregnating oranges with borax was an expensive undertaking for the plaintiff, it was for the plaintiff to show the facts fairly and frankly by customary quality and measure of proof. With William R. Millar, secretary and treasurer of the company and its general counsel, actually in court and testifying (R., I, 93) and with Ernest M. Brogden, vice president, promoter and patentee, in court and testifying (R., I, 114) the way to such proof was easy. Failing it, the presumption is that there were no unusual expenditures or other requirements to bolster the theory of invention. Mr. Brogden claimed none, and Mr. Millar's testimony was that after the "discovery" of the usefulness of borax was made promptly upon the employment of chemists for that purpose in 1923, the expenditures of the company were devoted to "installations of complete equipment for the application of both processes," Brogdite (the borax process) and Brogdex (the waxing process) (R., I, 96; R., II, 1342).

Commercial Success Test of Invention Only in Doubtful Cases.

But admitting, which we do not, that the Brogdite process has attained any remarkable commercial success, it proves nothing. That borax has a certain utility is not denied, otherwise of course, defendant would not use it, but were the use of the Brogdite ten times more widespread than it is, the use of borax would still be unpatentable. The rule of law is well settled that commercial

success can have weight only when the question of patentable novelty is in doubt." Thus in McClain vs. Ortmayer, 141 U. S., 419; this Honorable Court said:

> "Counsel for the plaintiff in the case under consideration has argued most earnestly that the only practical test of invention is the effect of the device upon the useful arts—in other words, that utility is the sole test of invention, and, inferentially at least, that the utility of a device is conclusively proven by the extent to which it has gone into general use. He cited in this connection certain English cases which go far to support his contention. These cases, however, must not be construed in such way as to control the language of our statute, which limits the benefits of patent laws to things which are new as well as useful." • • •
>
> "While this court has held in a number of cases, even so late as Magowan vs. New York Belt. & Pack. Co. (ante, 781), decided at the present term, that in a doubtful case the fact that a patented article had gone into general use is evidence of its utility, it is not conclusive even of that—much less of its patentable novelty."

This case has been cited with approval in subsequent cases. See Lovell vs. Cary, 147 U. S., 623, and Grant vs. Walter, 148 U. S., 547.

In Duer vs. Corbin Cabinet Lock Co., 149 U. S., 216, the Court said:

> "It is true the Orum lock seems to have gained an immediate popularity, to have met with large and increasing sales, and to have had the usual effect of successful patents in stimulating the activity of business competitors to produce an equally useful and popular device. Were the question of patentability one of doubt this might suffice to turn the scale in favor of the patentee. But there are so many other considerations than that of novelty entering into a

question of this kind that the popularity of the article becomes an unsafe criterion."

In the very recent case of Thropp's Sons Co. vs. Seiberling, 264 U. S., 320, Mr. Chief Justice Taft said:

"We are pressed with the argument that many tires, reaching into the millions, have been made under a license granted by Seiberling, and that the success of the device shows the utility and novelty of what he licensed." * * *

"Evidence of this kind is often very persuasive, especially when patentable novelty is in doubt." * * *

"But it is by no means conclusive, and must be weighed in the light of all the circumstances, to accord to it its proper significance." * * *

The rule has been recognized in Turner vs. Lauter Piano Co., 248 Fed., 930, in which the Court said:

"But, after a very careful study of the immense record in this case, we find ourselves without serious doubt; certainly without such doubt as may be influenced by the consideration of commercial success of the subject matter of the patents. There doubtless is merit in Turner's system of concrete construction; it may be superior to other systems; but merit, and superiority even, may spring from a conception which does not involve invention."

Thus commercial success is a criterion of invention or patentable novelty is applicable only in doubtful cases. It can never serve the two-fold purpose of first engendering the doubt and then resolving that doubt in favor of the patentee. There must first be a doubt before commercial success can be called in to resolve it.

In Republic Rubber Co. vs. G. & J. Tire Co., 212 Fed., 170 (C. C. A., 7th), the Court discussed the validity of the commercial success test for invention in the following language:

> "In the record before us the new thing is said to be the testimony which bears upon the high degree of usefulness of the Mell tire and also the great commercial success that has been achieved in its manufacture and sale. Matters of this kind can only be used to resolve a doubt in favor of the patentee, when the court has been left in doubt after a full consideration of the nature and scope of the patent and a comparison thereof with the teachings and structures of the prior art. *Utility of a device and commercial success in exploiting it cannot be used to resolve the doubt as well as to create it, else every useful and successful thing would be patentable.*" (Emphasis ours.)

And again in Hewes, et al., vs. S. Deiches & Co., 24 F. (2d), 503 (C. C. A., 7th):

> "Likewise appellants persuasively argue that the great commercial success which attended the appearance of their bow should resolve any doubt in their favor. We have not overlooked this argument but commercial success cannot create the doubt *as well as resolve a doubtful case* in favor of the patentee."

And surely in the light of this record there can be no doubt. Patentable novelty is wholly and unmistakably absent.

This is peculiarly a case for attention to the rule that commercial success is particularly unsafe as a guide to invention in a case where prior efforts to fill the space have not been shown. Belais vs. Goldsmith, 10 Fed. (2d), 673; Boston Pencil Pointer Co. vs. Automatic Pencil Sharpener Co., 276 Fed., 910.

In the present case we have shown that there was no evidence of any effort to bring in any such new remedy. And more than that it appears clearly by the plaintiff's own evidence that throughout the whole prior period there was a continuous, concerted, powerful and success-

ful effort on the part of the Department of Agriculture, with the leaders of the citrus industry co-operating, to cause all interested persons to believe that there was no occasion for any effort to fill any space, in the prevention program, and that the commercially feasible way of avoiding of injuries by rationally careful handling was a complete and economically sound means of preventing blue mold.

UNWARRANTED ASSUMPTION AS TO WHY THE USE OF BORAX AS A PRESERVATIVE TO BE USED ON ORANGES WAS NOT EARLIER ENDORSED BY THE DEPARTMENT OF AGRICULTURE.

The District Court permitted itself to be influenced by the conception that the Department of Agriculture, having experimented with the treatment of citrus fruits with boric acid to prevent blue mold, "abandoned the experiments because of the conclusion that no permanent check of the growth of the fungus was obtainable thereby" (R., I, 18). This conclusion is absolutely without support in the evidence. It not only is without support but also in fact is directly contrary to all of the evidence in the case which bears upon that point.

The two men who did that work in the Department of Agriculture were witnesses in this case. H. C. Gore, who had charge of the work, is now a chemist in the Fleischmann Laboratories in New York City (R., I, 227). He testified specifically that he and his associate, W. M. Scott, working in the Department of Agriculture at Washington in 1905, conducted experiments in the treatment of oranges against blue mold by the use of boric acid which confirmed the well known fact that borax inhibits the growth of mold (R., I, 229).

The defendant had procured a certified copy of the record of these experiments so far as then discovered in

the Department files. These certified records are in evidence in this case (R., II, 1475). While fragmentary, they show that Gore and Scott did two things: First, they tried the effect of applying boric acid variously, in powdered form and in solution, to oranges with wounds previously inoculated with blue mold spores; second, they tried the effect of first dipping oranges for ten minutes in boric acid solutions of different strengths, from one-half saturated to saturated, and then inoculating wounded places in the rinds with blue mold spores. It is the latter procedure, that is covered by the patent in suit,—that is, what the Circuit Court of Appeals designates as sealing the wounds to prevent the entrance of the blue mold spores (R., I, 577).

This record gives no indication whatsoever of any abandoning of the experiment because unsuccessful. The record shows that both types of experiment were incomplete, at the point where the record stops. The experiments that show soaking followed by inoculation (Experiments 8 and 10) show on their faces that at the date of the last entries sufficient time for final results had not elapsed (R., II, 1479-80).

And Dr. Gore's testimony not only shows that a satisfactory showing did result, but also that his superiors took a stand against recommending this procedure on account of the pure food agitation (R., I, 229).

The testimony of W. M. Scott, Dr. Gore's associate, emphasized the additional fact that G. Harold Powell, who had charge of the blue mold investigations, was single-minded in his adherence to careful handling as the best and most adequate procedure for avoiding blue mold (R., I, 234-5).

It may be observed that recently the further records of the Gore and Scott experiments have been found among the records of the Department of Agriculture, and that reference to them would give startling confirmation to

everything that was testified to by Dr. Gore and Mr. Scott. The cross examination of Dr. Gore called attention to the fact that the record as certified for the trial by the Acting Secretary of Agriculture (R., II, 1475) was incomplete (R., I, 230). Experiment 8 was to test the effect of inoculating oranges with blue mold spores after a 10 minute dip in saturated boric acid solution and experiment 10 was the reverse of that. No. 8 was started January 5 and No. 10 on January 6. The last date in the incomplete record is January 9. At that time the time for characteristic attack had not elapsed (R., II, 1479).

But Dr. Gore and Mr. Scott were trained observers. Either the inhibiting force of borax would show its effect, or it does not exist. The public record now available shows that the expected result followed. But even without this lately found record, all of the essential facts were in the case. These men experienced in matters of antisepsis and food preservation turned infallibly to borax and pointed at once to a procedure that is precisely the procedure of the patent in every essential particular. That shows that there was nothing in the problem to call for the exercise of the inventive faculty.

State of the Public Mind and Attitude of Authority with Regard to the Use of Preservatives on Articles of Food During the Period of Blue Mold Investigations Which Resulted in Adoption of Careful Handling Practices as Best Means of Prevention.

Both of the Courts below dismissed as though entitled to no consideration whatsoever the question of the influence of pure food agitation. The District Court said that the defendant offered no explanation of the failure to adopt borax except the theory that the Pure Food and

Drugs Act of 1906 in itself acted as a deterrent to the use of borax as a food preservative (R., I, 18). This is another illustration of the danger of the practice now obsolete and never sanctioned by competent authority of deciding an equity cause through deductions not definitely supported by findings of fact plainly related to the evidence. "The law requires an open and visible connection between the principal and evidentiary facts and the deductions from them, and does not permit a decision to be made on remote inference." First National Bank vs. Stewart, 114 U. S., 224.

The broad generalization that the defendant offered nothing by way of explanation of the alleged failure to put borax into general use as a preservative of oranges except reference to the deterring effect of the Pure Food and Drug Act of 1906, is about as wide of the mark as anything conceivable. It has been pointed out that the evidence for the plaintiff concurs fully with the evidence for the defendant to the effect that throughout the period of twenty years prior to this borax patent the orange industry was absorbed in the theory and practice of careful handling as a reasonably adequate preventive of blue mold. Neither Court indicated any conception of how largely this condition would tend to prevent a search for something else.

But any consideration with respect to recommendations for the use of borax as a preservative in 1924 as related to any failure in the matter of recommending and adopting the application of such preservative in earlier years, to be logical must be accompanied by reasonable apprehension of the state of the public mind and the attitude of authority with respect to the use of preservatives in such earlier years.

The defendant's evidence gave to the Court sufficient reminders on that subject; but the District Court dismissed that whole subject with a bare reference to the

Pure Food & Drugs Act of 1906. That reference speaks of the Pure Food and Drugs Act as one might speak of a shaft of stones found by a traveler on a desert with nothing to indicate its origin or meaning (R., I, 18). It is a well known part of the social, economic and legislative history of a generation that is not past that the Pure Food & Drugs Act of 1906 was the culmination of a movement of the utmost intensity against the use of preservatives on food stuffs and other forms of so-called adulteration.

Herbert C. Gore, who testified for the defendant, entered the employment of the Department of Agriculture in 1903 and was there for nineteen years. He went through the boric acid test as a member of the so-called Poison Squad and Hygienic Table with which Dr. Harvey W. Wiley as Chief of the Bureau of Chemistry made exhaustive tests as to the toxic effect of borax and boric acid as a part of the pure food investigation which later crystallized in the Pure Food and Drugs Act of 1906. When Dr. Gore was asked to suggest a means of preventing blue mold on oranges he at once tried borax and he testified clearly that his observation was that borax on the oranges inhibited the growth of mold. And he went on to say that at that time, 1904-5, there was a great deal of agitation against the use of any chemicals on foodstuffs in connection with the Pure Food Law which was passed a couple of years later, and that Mr. Powell deprecated the idea of using boric acid and did not like the idea of having anything on the orange wrappers stating that there were chemicals on the orange. This latter matter is made clear by the fact that the Pure Food and Drugs Act of 1906, while forbidding the use of any deleterious ingredient which may render the article injurious to health, contains the following proviso:

> "Provided, That when in the preparation of food products for shipments they are preserved by any

external application applied in such a manner that the preservative is necessarily removed mechanically, or by maceration in water, or otherwise, and directions for the removal of said preservative shall be printed on the covering of the package, the provisions of this act shall be construed as applying only when said products are ready for consumption'' (R., I, 270).

Dr. Carl Lucas Alsberg, who was Dr. Wiley's assistant in the Bureau of Chemistry and later his successor as Chief of the Bureau, testified quite fully in the present case with respect to the history of pure food legislation as well as concerning the widespread use of borax and its well known inhibitive effect upon blue mold (R., I, 268).

Keeping in mind the fact that the special study of blue mold decay of citrus fruit and its prevention began about 1902, according to the plaintiff's showing, and that Powell's crusade for careful handling followed by his discountenance of reliance on chemicals began about 1904, the references of the testimony to the influence of the pure food agitation are entitled to receive serious attention and have great weight instead of being dismissed as they were by both Courts, as having no real bearing on the case.

While it is true, as the Circuit Court of Appeals observed, that the Pure Food and Drugs Act was not finally adopted until June 31, 1906, it had been pending for several years; and its provisions had been the subject matter of most exhaustive investigations and hearings at the hands of committees of the Senate and House of Representatives and in other ways had been under the full glare of extreme publicity during these years. The use of borax in or upon foodstuffs as a preservative never failed to appear in these discussions, because of its so general use. The origin of the above-mentioned proviso in the Pure Food and Drugs Act which permits

the external application of a preservative in the preparation of food products for shipment if applied in such a way that the preservative is necessarily removed in getting the product ready for consumption, but with the condition that directions for the removal of the preservative shall be printed on the covering of the package, is directly traceable in the report of the hearings before the Committee on Interstate and Foreign Commerce of the House of Representatives on the Pure Food Bills, H. R., 5077 and 6295, as issued from the Government Printing Office in 1904. It is there shown that Hon. Augustus P. Gardner made a strong appeal for the concession later embodied in the proviso above quoted. Mr. Gardner based his appeal on the fact that the one port of Gloucester in his Congressional district shipped annually $2,000,000 worth of codfish, practically all of which was preserved by the application of a weak solution of borax. Arguing that in the preparation of the fish for the table the borax would be soaked out with the salt, he said: "Borax as you all know is nothing but an antiseptic, just as salt is an antiseptic, only it is a more powerful one and, like salt, it is soluble, and in soaking out the salt which must be done in order to make the food edible, the borax is of consequence soaked out at the same time."

At the same hearing Mr. Gardner suggested an amendment to the Bill substantially in the same terms as that later enacted as a part of the bill. He said that he had submitted this amendment to Dr. Wiley and that while Dr. Wiley had not definitely agreed to it he did not believe that Dr. Wiley would make any serious objection to permitting the use of borax on the outside of foodstuffs under the conditions stated, particularly in view of the condition that the presence of the borax would have to be indicated on the wrapper together with directions for the removal of the borax before eating the food (Department of Agriculture Library, 389.5 Un., 31 Ha., pp. 31-2).

The Year Book of the United States Department of Agriculture for 1900 contains a discussion on the use of borax or boric acid as a preservative. It says that the antiseptic property of boric acid was noted and utilized in 1856 and that its use as a food preservative became general about 1880, since which time it has steadily increased. The article concluded that since boric acid and borax are toxic compounds, though not as objectionable as some other preservatives, there was still some doubt as to whether their use should be permitted, but that in any case the sale of foods containing them should not be permitted unless so labelled as to indicate their presence and the amount employed.

Further reference to the question of the use of borax as a preservative appears in the report of the Senate Committee on Manufactures upon "Adulteration of Foods, etc.," ordered printed March 5, 1904, Senate Report No. 1209, to accompany House Report No. 6295, 58th Congress, 2nd session. This report recommended the passage of the Pure Food and Drugs Act which later was adopted.

Much additional material showing the strong opposition to the sanctioning of the use of borax as a preservative of food products is found in the volume "Adulteration of Food Products—Review and Topical Digest of the Evidence taken before the Senate Committee on Manufactures between March, 1899, and February, 1900, together with the Digest of the Laws of the United States and of the several States and Territories relative to Food Products, prepared by the Industrial Commission in accordance with the resolution of the Senate of December 6, 1900 (U. S. Department of Agriculture Library No. 389.5 Un., 33-a).

This report sets out the fact that decay in organic substances which fomerly was supposed to be produced by oxidation is now known to be due to germs

and ferments and that therefore anything that either kills the germs or suspends their action acts as a preservative. Antiseptics are divided into two general classes, substances that are absorbed in the systems as the preserved food is digested, such as alcohol, sugar, vinegar and salt, and a second class which consists of substances that do not enter into animal economy such as salycilic acid, borax and other boron compounds. The report suggests that the objection to allowing the use of preservatives of this latter class might be overcome by requiring plain labels giving notice as to what preservative is used, particularly in the case of antiseptics not evident to the taste or smell.

The published report of the Pure Food Law Hearings of the Committee on Interstate and Foreign Commerce beginning February 13, 1906 (U. S. Department of Agriculture Library, 389.5 Un., 31 Hb.), contains much of the same kind of material. At page 275 is shown a letter from Dr. Wiley to the Commissary General of the Army dated March 30, 1905, in which the writer says: "My conscience will not allow me to recommend the use of borax in shipping meats to the Phillipines." At these hearings Dr. Wiley submitted his voluminous report on the injurious effects of the use of even small quantities of boric acid in foodstuffs, as determined in the course of his Poison Squad tests from October 1, 1902, to July 1, 1903.

The Year Book for the Department of Agriculture for 1903 has a similar but more striking statement from Dr. Wiley.

The Annual Report of the Secretary of Agriculture for the fiscal year ended June 30, 1904, contains the following comment:

> "The argument that small quantities of deleterious substances may be used without harm is not logical, nor can it be based upon the result of the exper-

iments which have been made. On the other hand, the logical conclusion which seems to follow from the data at our disposal is that the use of boric acid and equivalent amounts of borax should be restricted to those cases where the necessity therefor is clearly manifest, and where it is demonstrable that other methods of food preservation are not applicable, and that without the use of such a preservative the deleterious effects produced by the foods themselves by reason of decomposition would be far greater than could possibly come from the use of the preservative in minimum quantities. In these cases it would also follow, apparently as a matter of public information, and especially for the protection of the young, sick and debilitated, that each article of food should be plainly labeled and branded, so as to show the character and quantity of the preservative employed."

Food Inspection Decision No. 76 of the United States Board of Food and Drug Inspection, issued July 13, 1907, gives notice that as the result of an exhaustive investigation it is ruled that the use of any quantity of such well known preservatives as borax and boric acid in food is injurious to health and hence that under the Pure Food and Drugs Act their use is inhibited. The circular of the Bureau of Chemistry (S. R. A.—Chem. 11), issued December 31, 1914, by C. L. Alsberg, Chief of the Bureau, shows the seizure of shipments of shrimp and prawn as containing boric acid or borax contrary to the Food and Drugs Act.

Gore, working on the Department of Agriculture laboratories in Washington reported to Powell in 1905 on the way a borax dip would adhere on and in the rind of an orange as a well-known resistant of mold. At that very time Dr. Wiley, Chief of the Bureau of Chemistry for the Department of Agriculture in charge of pure food investigations and enforcement, was in the midst of his long battle for a law to prevent the taking chances

with injury to health by permitting any quantity of borax or other preservative to be used on or in a food product. And at that very time there had been formulated and soon was enacted as a part of the law the concession apparently secured by Congressman Augustus P. Gardner of Massachusetts under which borax could be applied to the surface of an article of food and allowed to remain there if in the ordinary course of preparing the food for the table the preservative of necessity would be removed, provided, however, that the package or the covering of the article must be labeled to show the presence of the preservative, with directions for its removal.

There is no truth to be arrived at in this connection by thinking of 1924 in terms of 1904. What a worker in the Bureau of Plant Industry would do or say with respect to a project looking toward the sending out of borated oranges in 1924 has little bearing on what he would have dared to say in that regard in 1904, and later, when pure food controversies with their discussions with respect to the use of borax as a preservative were seething and the Pure Food Law of 1906 was in the making, and when made was a sword in the hand of Dr. Harvey Wiley threatening any one who would dare to send out an article of food that had been dipped in a solution of borax to ward off decay, without an announcement on the cover of the presence of borax and directions for removing it in preparation for consumption.

Dr. Alsberg referred to the evolution of the Pure Food Laws and the interpretation of the Federal Law of June 31, 1906, and quoted in full the specific proviso last referred to (R., I, 269-270). Nevertheless the Courts below seem to have missed completely the significance of Dr. Gore's statement that when he made his report to Mr. Powell the pure food agitation was on and that Mr. Powell did not like the idea of suggesting chemicals, the presence of which would have to be indicated by a state-

ment on the wrapper of the orange. The Circuit Court of Appeals takes no notice of this except to comment that the Pure Food Law was not passed until a couple of years later, and, then repeat this comment with significant emphasis in the next sentence (R., I, 576).

Reference has been made to the fact that many States preceded the United States with Pure Food Laws bearing adversely on the use of borax as a food preservative.

As lately as 1915 there was decided the case of Price vs. Illinois, 238 U. S., 446, in which the Supreme Court upheld an Illinois Statute which declared boric acid, *inter alia*, and all of its compounds and derivatives to be unwholesome and injurious and prohibited the sale of any food preservative containing such unwholesome and injurious substance. In the brief for the State of Illinois in that case reference was made to the Bulletin of the Bureau of Chemistry of the United States Department of Agriculture of December 31, 1914, ruling that boric acid could not be used lawfully as a preservative of food.

The case of Hipolite Egg Company, 220 U. S., 45, bore upon the seizure under the Pure Food Law of 1906 of a shipment of eggs alleged to contain a deleterious ingredient in the form of boric acid. The Pure Food Law was sustained and the confiscation of the preserved eggs was upheld.

The foregoing references are submitted in connection with the testimony of Dr. Alsberg, former Chief of the United States Bureau of Chemistry (R., I, 268) and the testimony of Herbert C. Gore (R., I, 227) as ample by way of evidence and reminder with respect to the pure food legislation of the United States and the several States and what went before and what came after that legislation. During the formative years of blue mold prevention practices in the orange industry the consistency of the United States Department of Agriculture

would have seemed very much of a counterfeit jewel if, after years of strenuous warfare against the use of borax and other like substances as food preservatives under the virile leadership of Dr. Harvey W. Wiley, whose warnings everywhere were heard and had great popular appeal, that department had suggested or endorsed a plan for adding boraxed fruit and boraxed vegetables to the commonly known and generally criticized boraxed meat, boraxed fish, boraxed shrimp, boraxed butter and boraxed milk.

The Article Claims.

Claims 23, 24, 25 and 26 directed to the treated orange as an "article of manufacture" are clearly invalid because they are not directed to patentable subject-matter. It is not every article of commerce that is an article of manufacture and entitled to patent protection.

This question was exhaustively discussed by the Court of Appeals for the third Circuit in Riter-Conley Mfg. Co. vs. Aiken, 203 Fed., 699. In that case a reinforced concrete structure was the subject of discussion.

> "The ideas of operative motion and mobility are so intimately associated with the word 'machine,' and machines are so frequently the subjects of patents, that we naturally disassociate the idea of a patent with a building. But the fact that the terms 'machine' and 'manufacture' are both used in the statute shows the latter was meant to include subjects the former did not. Thus, whether required in that case or not, the statement of Judge Acheson in Johnson vs. Johnston (C. C.), 60 Fed., 618, that 'the term "manufacture," as used in the patent law, has a very comprehensive sense, embracing whatever is made by the art or industry of man, not being a machine, a composition of matter, or a design,' is in our judgment sound. It has stood unchallenged by judicial decision and has the support of standard

authors. Thus 1 Robinson on Patents, Sec. 183, under the heading 'Manufactures, a Comprehensive Class of Inventions,' says:

> 'The species of inventions belonging to this class are very numerous, comprehending every article devised by man, except machinery, on the one side, and compositions and designs, upon the other.'

Walker on Patents, page 12, says:

> 'Whatever is made by the hand of man, and is neither of these (machine, composition of matter, design) is a manufacture in the sense in which that word is used in the American patent law.'

And Curtis on Patents, Sec. 5, cites Hornblower vs. Boulton, 8 Durnford & East, 98, where Lord Kenyon said:

> 'I have no doubt this patent is for a manufacture which *I understand to be something made by the hands of man.*'

In tariff taxation, as well as commercial and bankruptcy cases, the word 'manufacture' has been accorded the same meaning. Thus in Kidd vs. Pearson, 128 U. S., 20, it is said:

> 'Manufacture is transformation—the fashioning of raw materials into a change of form for use.'

In Tide Co. vs. U. S., 171 U. S., 216, it is said:

> 'The primary meaning of the word "manufacture" is something made by hand, as distinguished from a natural growth; but, as machinery has largely supplanted this primitive method, the word is ordinarily used to denote an article upon the material of which labor has been expended to make the finished product.'

In Commonwealth vs. Northern Co., 145 Pa., 105, 22 Atl., 839, 14 L. R. A., 107, the Supreme Court of

Pennsylvania said, of a company engaged in iron roof, bridge, and structural work, that the meaning of the word 'manufacture'—

> "has expanded with the advance of the arts and sciences until it has come to mean, as a verb, the making of anything by human art or skill, and, as a noun, anything made by art or skill."

And referring later to this definition in Commonwealth vs. Keystone Bridge Co., 156 Pa., 503, 27 Atl., 2, in a case involving a similar corporation:

> "If the definition just quoted is to be applied to the present defendant, then putting a roof or bridge together is the making of something by art or skill, and is manufacture as truly as making the constituent parts.'"

Certainly there is nothing about an orange with an insignificant quantity of borax adhering to its surface that brings it within these definitions. It is not in any sense of the word "something made by hand as distinguished from a natural growth." To the public it is a natural growth, pure, fresh and unadulterated.

Even more pertinent than the cases quoted by the Court of Appeals in the Riter-Conley case is the ruling of the Supreme Court in Anheuser-Busch Brewing Association vs. United States, 207 U. S., 556, 560:

> "In opposition to the judgment of the court of claims counsel have submitted many definitions of 'manufacture,' both as a noun and a verb, which, however applicable to the cases in which they were used, would be, we think, extended too far if made to cover the treatment detailed in finding 3 or to the corks after the treatment. The words of the statute are indeed so familiar in use and of meaning that they are confused by attempts at definition. Their first sense as used is fabrication or composi-

tion—a new article is produced of which the imported material constitutes an ingredient or part. When we go further than this in explanation we are involved in refinements and in impracticable niceties. Manufacture implies a change, but every change is not manufacture, and yet every change in an article is the result of treatment, labor, and manipulation. But something more is necessary, as set forth and illustrated in Hartranft vs. Wiegmann, 121 U. S., 609, 30 L. Ed., 1012, 7 Sup. Ct. Rep., 1240. There must be transformation; a new and different article must emerge, 'having a distinctive name, character, or use.' This cannot be said of the corks in question. A cork put through the claimant's process is still a cork."

The "treatment" of the corks referred to in that case is set forth in the footnote to the opinion as follows:

"The corks so used by the claimant in the making and shipment of its export beer were corks imported into this country from Spain, where they were cut by hand, without steaming. After these corks were received by claimant in its brewery in St. Louis, and while in the same state in which they were imported from Spain, they were carefully examined and all that were not fit for use in the export trade were rejected. The good ones were then selected and assorted according to sizes, and were branded with the date, the name of the brewer, the name of the beer, and a special private mark to show what firm the cork came from. All this was done by unskilled labor.

The selected corks were put into a machine, or air fan, the unpatented invention of a man in the employ of the claimant, and all dust, meal, bugs, and worms were removed therefrom. They were then thoroughly cleansed by washing and steaming, removing the tannin and germs and making the cork soft and elastic, and they were next exposed to blasts of air in a machine, the unpatented invention of the same employee, until they were absolutely dry.

Following this, they were put for a few seconds into a bath of glycerine and alcohol, the proportions of which are a trade secret which the claimant has the right to use, and then they were dried by a special system. This bath closed up all the seams, holes and crevices, and gave the corks a coating which prevented the beer from acquiring a cork taste. The corks were then dried by absorption of the chemicals that had covered them. If the corks had been used without the application of this chemical bath, the beer would have acquired a taste of cork which would have injured the market for it.

The whole process took from one day to three days, the longest part of it being the drying after the chemical bath."

The case of Hartranft vs. Wiegmann, et al., 121 U. S., 609-616, is also directly in point:

"We are of opinion that the shells in question here were not manufactured, and were not manufactures of shells, within the sense of the statute imposing a duty of 35 per centum upon such manufactures, but were shells not manufactured, and fell under that designation in the free list. They were still shells. They had not been manufactured into a new and different article, having a distinctive name, character or use from that of a shell. The application of labor to an article, either by hand or by mechanism, does not make the article necessarily a manufactured article, within the meaning of that term as used in the tariff laws. Washing and scouring wool does not make the resulting wool a manufacture of wool. Cleaning and ginning cotton does not make the resulting cotton a manufacture of cotton."

Of the patent cases in which the question has been considered, Armstrong Seatag Corporation vs. Smith's Island Oyster Co., 254 Fed., 821, 822 (C. C. A., 4th), is in point:

dip of the prior art. The use of the borax dip for food stuffs in general was ruled against *because of the borax left in the article of food,* and as we have pointed out in our main brief (p. 107) certain exceptions to the ban were permitted when in the preparation of the food for consumption the contained borax would necessarily be removed. The oranges treated by Bishop necessarily contained a small amount of boracic acid in the rind as would the fruit or other article subjected to the processes described in the other patents of the prior art. Some of these patents mention this obvious fact, for example, the patent to De Sturler (R. II. p. 1566) states "that the surface of the article treated (perishable fruit) is both sterilized and protected from the deleterious action of the germs in the air", this disposing of any possible doubt that the boracic acid is "left on the surface of the fruit". (Respondent's brief p. 32).

The article claims are void not only for want of novelty, but also because they are not directed to subject matter embraced in the fields of invention specified in the patent statutes. The lower Courts placed the orange with its adhering, invisible and microscopic quantity of borax in the category of an "article of manufacture" on the supposed authority of *Riter-Conley Mfg. Co. v. Aiken,* 203 Fed. 699, but that case had no bearing here because the subject matter under consideration (a reinforced concrete structure) was altogether an artificial creation—a product of the hand of man. The question here presented has no close analogy in the patent cases decided by this Court or the inferior Courts but under the tariff cases cited in our main brief, the orange defined in the article claims of the patent in suit is clearly *not* a "manufacture." The respondent has no answer in its brief to these cases except to say that tariff cases are not applicable to questions of patent law. Quite obviously, however, the classification

of natural products and manufactured articles under the patent laws and the tariff laws are governed by the same general principles. In the one case the manufactured article is distinguished from the natural product for the purpose of giving a reward in the form of a patent monopoly to the one who has exercised inventive skill in producing a new thing. The classification under the tariff laws is also for the purpose of giving a reward (in the form of tariff protection) to those who have expended their energies in "fashioning raw materials into a change of form for use."

Also the general definitions of manufacture in the tariff cases and the patent cases *are precisely the same.* In *Tide Co. v. U. S.,* 171 U. S. 216, a tariff case, "manufacture" is defined as "something made by hand as distinguished from a natural growth," while in *Riter-Conley Mfg. Co., v. Aiken, supra,* manufacture is defined as embracing "whatever is made by the art or industry of man." We submit, therefore, that rulings of this court cited in our main brief are not inapplicable because they are tariff cases and under these cases the orange defined in the article claims of the patent in suit cannot be classified as a "manufacture." The respondent's argument (p. 64 Res. brief) that the orange defined in the patent in suit is analogous to "dye materials, adhesive and cementitious compositions, etc," the character of which "cannot be ascertained merely upon inspection but only by some physical or chemical test" is farfetched and fundamentally unsound. Materials of this kind are unquestionably manufactured products. Their usefulness in serving their intended purposes is derived solely from the qualities acquired in the course of their manufacture. Such materials are purchased and used because of these imparted characteristics. Not so, however, with the orange of the patent in suit. It serves no purpose and has not use which in any way

distinguishes it from a fresh orange untreated in any way. Oranges subjected to the borax dip pass into the channels of trade to the jobber, the wholesaler, the retailer, and to their ultimate consumption indistinguishable by appearance, by characteristics or otherwise from oranges not so treated. Each seller of the fruit and indeed the ultimate consumer or "user" is an unwitting infringer of these article claims. The respondent suggests no way in which the dealers and consumers of fruit may be assured that the orange they sell or purchase are not infringing "articles," except by the obvious expedient of keeping oneself informed as to the brands used by respondent's licensees *and buying only such brands.* (Res. brief, p. 64). The law, however, does not sanction patents of such indefinite scope and the case of the *Holland Co. v. Perkins Glue Co.*, 277 U. S. 245, discussed at length in our main brief (pp. 120 *et seq.*), is directly in point.

Respondent's alleged distinction between the case at bar and the *Holland Case* finds no support in the facts. The respondent says that the patent claims must always be read in connection with the specification. As a general principle of construction this is undoubtedly true, but this court found the article claims of the Perkins glue patent void notwithstanding a full and complete statement in the specification of the process of making the glue. Moreover, there is nothing in the specification of the patent in suit which adds anything to the definition of the alleged "manufacture" embraced in the claims. Nowhere does the patent specification define the amount of borax in the rind which is "sufficient to render the fruit resistant to blue mold decay." Hence, not even by chemical analysis can the alleged "article of manufacture" be distinguished from a natural fresh orange. The mere presence of borax in the rind is not enough. It must be in "amount sufficient to

render the fruit resistant to decay" and nowhere is that amount specified. If this patent is sustained the dealer in fruit has no alternative but to hold his fruit for a sufficient time for decay to set in. If the fruit doesn't decay he can't sell it because presumably it infringes and if it does decay it is no longer fit for sale. Even this drastic test is not positive for a sound orange without treatment of any kind is quite resistant to decay.

There is much said in respondent's brief about sealing the wounds of the orange rind with a mold inhibiting agent, but the process claimed is not confined to the treatment of injured fruit. Not one of the claims, either process or article, contains any such limitation and the procedure constituting the alleged infringement is the dipping of the fruit remaining after the customary culling out of the injured oranges, in the borax solution. The process, as we have stated before, is nothing more or less than the dipping of the article to be preserved in borax or boric acid solution. For the most part the claims specify the concentration and temperature of the solution in terms of the function to be accomplished, namely the preservation of the fruit against decay. Nor is there any limitation as to temperature or concentration expressed in the patent itself. It may be used hot or cold—at any temperature short of cooking the fruit. Its concentration may be anything up to 20% which is the greatest concentration that can be obtained at any temperature short of cooking. But even if these limitations be read into the claims they are still wanting in novelty for the prior art patents also specify hot concentrated solutions as well as cold solutions of lesser concentration.

There is no evidence to support plaintiff's theory that the microscopic quantity of borax left in the rind after the oranges pass through the wipers and polishers

in the course of the ordinary packing house procedure employed by defendant has any effect on the skin tissues at the minute abrasions supposedly present on some of the fruit.

Dr. Fuller (R. Vol. I. 111, 114) is the only one of plaintiff's witnesses who gave testimony of an actual comparison of borax-treated and untreated fruit. Shortly prior to the filing of the complaint on April 15, 1926, two boxes of fruit were shipped to Dr. Fuller from Florida—one a box of high grade fruit, washed, polished and wrapped as well as borax treated, and the other a box of unwrapped fruit that "were just sent loose in the box". "In general they were smaller oranges of inferior appearance" (R. I. p. 114). They were first inspected on April 15th. The spoilage was of course considerable in the inferior, loose, unwrapped and untreated fruit, but the spoilage was not long in setting in in the other box and apparently by May 1st all the oranges not used for testing had spoiled (R. I. p. 112).

Dr. Fuller testified that the treated oranges had borax on the rind which he estimated as .02 of 1% calculated on the weight of the orange. This borax did not prevent the oranges from spoiling. The only logical conclusion from Dr. Fuller's testimony is that the mold spores on the treated fruit were rendered temporarily innocuous—or in the language of Boesken et al. (R. II. p. 1516), Bitting (R. II. p. 1525) and the other technical writers on the subject, their development was "inhibited" by the borax dip and when the effect of the treatment wore off the oranges spoiled, just as did the others, notwithstanding the fact that the borax remained on the fruit in the minute quantity found by Dr. Fuller.

Dr. Fuller's tests showed that all the borax is readily washed off the orange. His analyses showed the

same amount of borax when removed from the orange by washing and when reduced to ash by burning the peel. The quantity is most minute. Assuming five oranges to the pound, there would be, according to Dr. Fuller's figures, four one hundred thousandths (4/100,000) of a pound of borax to the orange, or one pound of borax would be distributed over 25,000 oranges. The most powerful germicides have little effect in such minute quantities, and borax is concededly a mild antiseptic.

If plaintiff's patent be construed as limited to something more specific than the procedure of subjecting the oranges to the ordinary borax dip, the record contains no proof of infringement. The defendant's oranges tested by Dr. Fuller—and this is all the evidence on the subject—did decay despite the modicum of borax on the rind. With the ordinary procedure as practiced by Bishop for example (R. I. p. 180) of dipping the fruit and letting it dry without any subsequent wiping or polishing the quantity left on the fruit is obviously considerably greater and would probably be sufficient to render the fruit mold resistant but where there is, as in the defendant's practice a removal of a substantial portion of the borax, it was incumbent upon plaintiff to prove by substantial evidence that the borax remaining on the orange was in fact sufficient in amount to "render the fruit resistant to blue mold decay".

Dr. Fuller's tests proved nothing whatsoever. There was no excuse for sending small, inferior, unwrapped oranges, "loose in the box," for comparison with the high grade, selected and wrapped fruit purchased from defendant.

If plaintiff had wished to make an honest comparison of defendant's treated fruit with untreated fruit, quite obviously the fruit sent for comparison should

have been identical with the treated fruit—except for the borax treatment. Probably such fruit would have shown no greater decay than the boraxed fruit, just as some of defendant's houses where no preservative is used had less decay than those which used borax (R. II. p. 1456).

Respondent Having Befogged the Issues in the Minds of Two Courts Tries the Same Strategy in Its Present Brief. Begging All of the Issues, Plaintiff Adopts the Guise of a Penniless Inventor and Asks Sympathy Against An Alleged Combination of Powerful Infringers Aided by States and Government.

Plaintiff started out a year before the borax device with $325,000 of capital to spend in exploiting a packing house equipment business with the aid of a mysterious waxing process called *"Brogdex"* (R. I. 93, 96, R. II. 1342, 1464). Everything conceivable was claimed for Brogdex as a preservative of fruit by E. M. Brogden himself, shortly before the incorporation of the Brogdex Company (R. I. 1465). At that time, October 17, 1921, more than a year before any thought of recommending the simple borax application, Brogden was busy with an advertising agency "with a view to creating a big noise" about the scheme of keeping oranges for indefinite periods by making them water proof and air proof through the application of a coating of paraffin combined with "natural waxes and oils taken from the citrus tree" which were used in Brogdex as "a preserving agent" together with antiseptic solvents,—the whole "impervious to organic decay"; this coating being "invisible except to the trained eye" (R. II. 1465-68).

And on the prompt organizing of the company to carry on this business, when later "Brogdite" (in reality borax) was offered to the public as a proprietary composition for washing citrus fruit, "Brogdex," the proprietary waxy coating was still insisted upon as a part of the dual process for which the Brogdex Company issued licenses. William R. Millar, secretary-treasurer and general counsel of plaintiff company, the only witness who testified concerning its activities, said:

> "All the other licenses issued in California have substantially the same terms of royalties and other general provisions of this license to the Mutual Orange Distributors. Royalties have been paid under all these licenses. In Florida we have executed a contract giving to the Skinner Machinery Sales Company of Dunedin, Florida, an exclusive license for the use of these processes on citrus fruits in the State of Florida. So far as I know, this is its only business, *i. e.*, it is a licensing organization there. I have the original of that license from the Brogdex Company to the Skinner Machinery Sales Company here" (R. I. 94, R. II. 1342, 1352).

Plaintiff studiously avoids discussions of most of the significant matters that clearly appear in the record, as reviewed in our main brief, and relies upon a vague and rambling set of specifications and claims for the application of borax to an article of food in the very way that long has been most customary and asks that this suggestion be treated as invention, without the offer of a word of testimony to show how it came about, despite the fact that Brogden, one of the patentees, was on the witness stand and Trowbridge, the other patentee, was an employee of the company and available to it.

It was for the plaintiff to anticipate that the Court would say as it did that the claimed process on its face did not savor of invention in view of the disclosures of the prior art. And anticipating that, it was for the plaintiff to come forward boldly and show how this alleged invention came about.

The plaintiff's record is absolutely bare of any showing of experimentation of any description whatsoever. The record simply says in substance that the "big noise" about *"Brogdex,"* the mysterious waxy coating, was not enough to back up the plaintiff's campaign for furnishing packing house equipment on a royalty basis; and that the company "employed chemists and began experimenting and then as soon as the discovery was made began demonstrating the success of the borax process", after which "the expenditures that have been made have been made in the installations for complete equipment for the application of both processes". That is what was said by William R. Millar about the invention of the borax process and it is all that the plaintiff volunteered concerning the conceiving and working out of the alleged invention (R. I. 96). Mr. Millar having been not only the secretary and treasurer of the plaintiff company but also its general counsel, presumably would have brought forward some real evidence on this subject if there was anything in existence to add color of invention.

And if when the idea of preserving fruit was brought forward Brogden or Trowbridge did anything more than to advise trying the use of the common preservative borax in the way that it was used on other articles of food, certainly they would have said so in support of their claim of invention.

Although we brought forward these facts in our main brief, the plaintiff ignores them entirely and sat-

isfies itself with the bald assertion that the claimed process of applying a borax solution to fruit as a preservative represents "the persistence of inventors" who undertook to solve the fresh fruit decay problem through chemical control; and that the patent in suit "represents a property right created solely through the intelligent inventive efforts of members of a small business organization fighting persistently in the very teeth of unanimously adverse opinion and the settled practice of the art" (Resp. Brief, p. 3).

With this dictum which we have shown to be without support in the record, the plaintiff tries to capitalize the fact that the sanction given by the Circuit Court of Appeals to a patent monopoly upon a commonly used preservative for its ordinary way of use in its accustomed field was so startling that the United States Department of Agriculture called the attention of the Attorney General to the destructive influence that grants of that character would have upon the work of the Department of Agriculture, and the Attorney General of the United States viewed this extension of the patent law as a matter serious enough to call upon him to emphasize the public importance of the matter in a memorandum on behalf of the United States *amicus curiae.* In view of the expressed nature of the public interest in this case, to which we have made fuller references in our main brief (pp. 8, 9) plaintiff has no right to charge anything sinister in the appearing of seven fruit-growing States upon a brief as *amici curiae,* or in the show of interest on the part of a State-wide citrus growers association of Florida.

The patent in suit had given notice that this appropriation of borax was only the beginning of the plaintiff's undertakings toward imposing patent monopolies upon the fresh fruit industry and horticulture generally.

The patent not only claims this general monopoly upon the use of borax solutions but also recites co-pending applications covering paraffin and other waxy coatings (R. I. 596) and a co-pending application involving the rinsing of fruit after the application of any chemical (R. I. 597).

Plaintiff's witness Knox testified that paraffin had been applied to fruit in Florida for a long time "for such purposes as polishing the fruit" and it is a matter of common knowledge that under the United States Bureau of Chemistry and other health authorities, fruit growers have been prosecuted for leaving chemicals from sprays and baths on their fruit and that it has not been long since the Departments of State and Commerce were called on to look into British embargoes against American fruit bearing such residues. The concern of the Department of Agriculture, the fruit industry and fruit-growing States is not to be wondered at in view of the nature of the principle involved in this case emphasized by plaintiff's notice of extensions already proposed.

The nature of the plaintiff's patent conceptions and argument is indicated collaterally by the plaintiff's treatment of the matter of its proposed waxy coating.

The patent recommends the use of a coating material comprising paraffin and a suitable solvent intermingled to provide a mixture that can be spread "in an extremely thin film over the fruit by the action of the brush rolls" (R. I. 595). The patent shows that these brush rolls were well known in the prior art (R. I. 594) and we have shown that the plaintiff's witness Knox testified to the well known practice of polishing the fruit with a paraffin coating, which for a long time had been done with these brush rolls.

The patent elsewhere refers further to the application of this protective coating to be applied "for the purpose of preventing or reducing shrinkage and withering and of insuring conservation of the original freshness and flavor of the fruit for prolonged periods of time". And the patent asserts that this coating "can be spread all over the surface of the fruit to produce an extremely thin protecting film which is not noticeable except by the expert eye and does not interfere with the so-called breathing or transpiration of the fruit to an undesirable extent, but which is effective to conserve the plumpness and freshness of the fruit as above stated" (R. I. 593).

It is to be noted that the patent disclaims this waxy coating as an element of its borax patent (R. I. 596) and that at the trial the plaintiff eliminated by stipulation the claims of the borax patent which involved the application of the waxy coating (R. I. 15). But the plaintiff anticipating its difficulty with the Bishop patent (Our main brief, p. 53) makes this bald assertion about applying a paraffin coating that will not be air proof and so will permit the breathing of the fruit, which is contrary to human experience and not supported by any specification as to the magic to be used in covering the entire surface of an orange with a paraffin coating without closing the pores. And more significant still of the looseness of the plaintiff's presentation of its case is the fact that this coating of paraffin which the plaintiff sets up as not interfering with "the so-called breathing or transpiration of the fruit" (Plffs. Brief, p. 101) as against Bishop's air-excluding gelatin solution (Plffs. Brief, p. 99)—manifestly is the same Brogdex coating that Brogden held out as air-proof (R. II. 1466). Brogden described his Brogdex air-proof coating exactly as his borax patent describes his coating which, to point

an argument against the Bishop patent as an anticipation, must permit transpiration.

Both coatings comprise paraffin and a solvent thereof (R. I. 595, R. II. 1467). The Brogdex air-proof coating is described as "invisible except to the trained eye" (R. II. 1467). The coating of the borax patent is described as "not noticeable except by the expert eye" (R. I. 593).

The borax patent says that the composition that constitutes this paraffin coating which permits transpiration is the subject matter of prior co-pending patent applications.

The plaintiff's form of license agreement shown to have been in use as late as June 24, 1926 (R. II. 1363) covers the use of this waxy preservative coating known as Brogdex.

The plaintiff can hardly be permitted to blow hot and then blow cold on this subject of permitting or not permitting fruit to breath through a thin paraffin coating and then undertake to destroy the Bishop patent because it contemplated a gelatin coating. It takes something more than the will or the dictum of the plaintiff to cause a paraffin coating to permit transpiration. And the plaintiff having said in one breath that its thin, hardly perceptible paraffin coating is air excluding, it can hardly be heard to say the contrary in the next breath without explaining the mystery.

And it is to be noted that the only evidence in the case relating to the so-called breathing of fruit is that brought out in the plaintiff's cross-examination of Dr. Carl Alsberg, who was presented by the defendant on the witness stand to give full opportunity for authoritative information on all of the scientific phases of this case (R. I. 268-308).

And the fact is that testifying from the viewpoint of a chemist of great experience, Master of Arts and Doctor of Medicine of Columbia University, student of chemistry at German universities for three years, member of the Harvard University faculty for six years and part of that time head of the Department of Chemistry, Chief of the United States Bureau of Chemistry for nine years, and now Director of the Food Research Institute of Stanford University, Dr. Alsberg gave it as his opinion that the processes of death in fruit from the piling up of the products of cell life within the cells would take place more rapidly in the case of a paraffin coating than in the case of a gelatin coating (R. I. 302).

And in passing we call attention to the fact that whereas the plaintiff complains (Plffs. brief p. 2) that the defendant called in six witnesses who had been employed by the Department of Agriculture for periods varying from five to nineteen years, it is interesting to consider how far the Court would have been in possession of facts established by actual testimony without which the case could not be understood fully, if the defendant had followed the plaintiff's policy of depending chiefly on a mass of published material and, as the plaintiff did, either had refrained from calling witnesses presumably able to testify on crucial points or, after calling such qualified witnesses, had refrained from examining them on such crucial points concerning which they were manifestly qualified to testify.

Dr. Alsberg in addition to his unquestioned scientific authority was peculiarly qualified to assist in arriving at an understanding of the merits of this case by reason of the fact that he was Chief of the Bureau of Chemistry in charge of enforcement of the Pure Food Law from 1912 to 1921, and prior to that had been assistant to Dr. Wiley, Chief of the Bureau (R. I. 268-271).

Dr. Alsberg's testimony may well be contrasted with the only scientific testimony offered on the part of the plaintiff which was that of Henry C. Fuller, a consulting chemist of Washington City (R. I. 111-114) and whose testimony was confined to a statement of his examination of two boxes of oranges and four bottles of borax solution gathered up by the plaintiff at packing houses of the defendant.

Likewise disregarding their former Government employment and seeking witnesses who could come to court and testify to facts, the defendant brought in Herbert C. Gore, now a Fleischmann & Company chemist, who had actually pointed out the suitability of borax for preserving oranges against blue mold in 1905 (R. I. 227); John R. Winston, another practicing chemist who had made a similar determination in 1918 (R. I. 215); William M. Scott, a man of wide experience with insecticides, fungicides and like chemicals, through long Government employment and employment in the research department of the General Chemical Company, and the associate of Gore in the borax demonstration of 1905 (R. I. 233); Edward L. Markell who was associated in the careful handling work (R. I. 201); and William R. Barger, still with the Department of Agriculture, whose attention had been called directly to this use of borax through Winston's work in Florida, and who went into the application of borax as a preservative in California as soon as he learned that there were proposals afoot to send out preserved oranges (R. I. 236).

Plaintiff's Misleading Statement of Facts.

The plaintiff occupies forty pages in setting out alleged facts without once undertaking to meet the points made in the defendant's main brief.

Specifically the plaintiff stands on erroneous assumptions declared by the Courts below, and undertakes to support them by detached quotations and references which, in our main brief, we have shown to have an exactly contrary meaning, particularly when read with their proper contexts.

In our main brief we show by precise references to the record the manifest error in the assumptions that controlled the decision. We show that the Courts below failed to make specific findings of the facts upon which their conclusions were based, and moreover that there was no support in the record either for such essential findings of underlying facts or for the ultimate assumptions of the Courts.

While the plaintiff shows that it correctly apprehended our position in this regard (Plaintiff's Brief, page 6) nevertheless the plaintiff ignores and apparently would be glad to have forgotten the things that we pointed out: with respect to plaintiff's failure to support its issues by its qualified witnesses on the stand, and other witnesses plainly available to it; with respect to how its leading expert, Hart, fully negatived the plaintiff's main positions; with respect to how the plaintiff's great mass of publications go to prove that the industry was lulled into a sense of security, with good reason, and the idea of need and search fully thereby negatived; with respect to the presumptions adverse to the plaintiff's theories which arose from the plaintiff's failure to support, by available testimony, the theories upon

which the decision rests; and, among other specific things, with respect to the thirteen authorities pointed to by the Circuit Court of Appeals as representing the heart and soul of the supposed search (Our main brief, pages 72-92).

Likewise, the plaintiff holds up the conclusion that blue mold was the bane of the industry prior to the alleged invention in suit, and ignores the fact that throughout the publications offered by the plaintiff itself, it was shown by repeated Government bulletins, addresses and papers of Government experts, and the enthusiastic endorsement of horticultural societies that "careful handling" had solved the blue-mold problem, a matter popularly written up in the Review of Reviews in 1909, (Plaintiff's Exhibit No. 11, R. II. 777) and also made a part of the best literature of horticulture as found in Bailey's Standard Encyclopedia of Horticulture published in 1917 (Plaintiff's Exhibit No. 35, R. II., 1145, see appendix to Defendant's main brief).

Plaintiff's Attempt To Divert Attention From The Fact That None Of Its Witnesses Were Questioned On This Subject Of Search.

After bringing forward many quotations which were plainly calculated to mislead (*infra,* pp. 27-37), the plaintiff, in its statement of facts (pages 21-23) represents a considerable number of its witnesses as substantiating by their testimony this claim of, "Continued search throughout many years for a satisfactory solution of the blue-mold decay problem concerning packers and shippers of fresh fruit". Reference to the transcript of the testimony shows that none of these witnesses were questioned on this subject of search, so as to present any affirmative evidence on that subject or give any opportunity for cross-examination, or occasion

for reply. As stated in the plaintiff's brief (page 21), witnesses Knox, Wolstencroft and McIntyre from California had personal contact with the "careful handling" work of the Department of Agriculture. And the fact is that they endorsed it, and knew that it was universally adopted. There is no point to plaintiff's statement that these witnesses knew Powell, and that they were affiliated with the California Fruit Growers Exchange, which, as one of its functions, disseminated information about citrus fruit methods. In the statement further quoted from these witnesses that there were times when because of wind storms, excessive rains, prevalence of particular infections, scarcity of labor and other causes, there were heavy losses in the citrus industry from decay of various kinds the plaintiff repeats a reckless statement made by Knox, a plainly biased witness, who had helped to finance the Brogdex process about losses due to blue-mold decay amounting to between one and two million dollars a year at some indefinite time prior to 1924; and the plaintiff argues from this statement in spite of the fact that Knox later says:

> "These figures include all kinds of decay." (R. I. 25).

Regardless of that, the figures have little significance since nothing is brought forward by which to fix the time or the conditions with respect to any such heavy losses, or from which to form any estimate as to what would have been the effect of the application of borax at a similar time and under similar conditions.

Plaintiff's Further Strategy in Keeping Away From the Facts.

The plaintiff calmly ignores its own showing in a long series of publications of the United States Department of Agriculture and publications of other authorities and in discussions on the subject of decay selected by the plaintiff from the volumes of reports of ten annual conventions of the Florida State Horticultural Society; all of these publications, taken by the plaintiff from the literature of more than twenty years, being consistent to the effect that the blue mold decay problem had been solved. The exhaustive Government bulletins which have been abstracted in the appendix to our main brief are not confined to any general statements but contain exhaustive and most convincing detailed proofs, not only of the logic but also of the feasibility of the practice of avoiding blue mold by giving it no means of access to the fruit.

And the remarkable unanimous endorsement and acceptance of this teaching is shown in the reports from the Florida State Horticultural Society meetings where in 1907 Tenney, Government pomologist and assistant to Powell in California, presented the case for careful handling (R. I. 649); where in 1908 plaintiff's prominent expert, William S. Hart, who testified at the trial, reviewed the subject in the light of his extended and most successful personal experience, avowedly following Tenney's advices of 1907 and Powell's exhaustive report (R. I. 755); where in 1909 Tenney showed the uniformly successful application of careful handling methods throughout Florida and the discussion of the members showed enthusiastic concurrence (R. II. 808); where in 1910 Stubenrauch, Tenney's successor in the Florida work, brought down to date the report of the work throughout Florida and its results, with detailed

reports of exhaustive observations as to percentage of injuries from various causes under various types of handling and convincing showing as to the elimination of injuries and the consequent avoiding of blue mold decay.

Typical of the theme of these various meetings is the following comment made by Stubenrauch at this time:

> "Is it possible to handle oranges carefully enough on a commercial scale to eliminate injury? I find that there was considerable discussion on this point after the reading of Mr. Tenney's first paper before this society. Many of the growers seemed to doubt that it would be practicable under Florida conditions to handle without injury. The best answer to the question is the fact that it is being done, not only in California, but in Florida also" (R. II. 842).

At the annual meeting of this Florida Society in 1912 H. J. Ramsey of the United States Department of Agriculture read a paper which comprises twenty pages of the printed record (R. I. 902-921). It is full of evidence of the value and sufficiency of careful handling work. Its text is as follows:

> "It has been fully demonstrated that fruit can be carefully picked and packed in a commercial way so that it will carry to the market in sound condition and hold up for a sufficiently long period to allow of its distribution and consumption" (R. II. 903).

The State Horticultural Society endorsed this presentation without reserve. William S. Hart, plaintiff's expert witness at the trial seconded the strong resolution of endorsement. At the same society's annual meeting for 1913 A. W. McKay of the United States De-

partment of Agriculture again gave a review of the same subject which again met with unanimous endorsement by the Society (R. II. 936). To the end of the publications offered by the plaintiff, the prior art shows not the slightest departure from this adherence to careful handling as a sufficient remedy.

It would be a travesty if it could be said that such proof of the enormous and enormously successful work of the United States Department of Agriculture in bringing home to the fresh fruit world the supreme importance and the adequacy of careful handling in avoidance of blue mold decay, could be taken as evidence that something different was being sought and could not be found until the plaintiff found it. It is not far-fetched to say that the establishing of such a doctrine would be proper cause for additional concern on the part of the Department of Agriculture. It would be a sad reflection for that Department if it were to have against its record the charge that in building up this supreme achievement of the fresh fruit shipping industry which has received world-wide recognition and the story of which is the greatest classic of the industry, it had built up a case for a patent that seeks to monopolize the use of a common substance in a portion of its well known field. The public interest calls upon right reason to say that whatever else the plaintiff may have to offer in support of its patent, or by way of a bar to the original rational conclusion of the Court that in itself the patent does not savor of invention, the plaintiff can not prostitute this work of the Government and make it pregnant of search when from the earliest days of this work the Department of Agriculture continuously urged upon the industry that the search was at an end; that the blue mold problem had been solved from a commercial standpoint; and that it would be unwise to spend time on further search and place reliance on things that would tend to

lessen a proper reliance on careful handling and thereby cause a let-down in careful handling methods.

The Twelve References to Trial of Chemicals Taken By the Plaintiff From Literature of the Prior Art Irrelevant—Eight State a Single Showing of 1907—Four Are Entirely Foreign to the Question in Issue.

The plaintiff finds in its eight hundred fifty pages of literature comments which it reproduces within the scope of pages 50 and 51 of its brief, from which it argues that after protracted search chemicals were declared worse than useless. An examination of the record shows that it is a fact beyond the possibility of contradiction that these various statements are nothing except repetitions of the statement that Powell made in his report of 1907 to the effect that investigation had shown that the spores of the blue mold decay fungus were of such a nature that they could not be killed in the wash water without injuring the fruit; this with the exception that several of the most striking statements when restored to their proper context are seen to have no reference to blue mold.

Plaintiff's first quotation on page 50 is what Tenney said to the Florida State Horticultural Society in 1907 when he went to Florida to present the cause of careful handling on which he had been working with Powell in California. He simply repeated the substance of the second quotation on page 50, which was what he had said as one of the joint authors with Powell in the bulletin which was prepared in that same year and published in 1908 as an exhaustive report on careful handling (R. I. 664). In that bulletin Powell and his associates (including Tenney) for the first time, so far as this record shows, set down the proposition that the project of kill-

ing blue mold by a disinfectant in the wash water was not promising or advisable; and that if possible "it would place a premium on the shiftless management of the groves and on the rough, careless handling of the fruit".

Plaintiff's next quotation read in its proper context is neither more nor less than a quotation from plaintiff's witness Hart (1909) to the effect that when he was in California Powell told him this very same thing (R. II. 823).

Next the plaintiff quotes Stubenrauch as saying the same thing in 1910. Plaintiff fails to point out that Stubenrauch also was one of the authors of the 1907 bulletin in which this statement first appeared (R. I. 644, 709) and that he was simply repeating that statement.

Next plaintiff quotes from a paper read by H. S. Fawcett at the annual meeting of the Florida State Horticultural Society for 1911 in which he said: "Some of the chemicals we used appeared to increase the amount of blue mold decay (plaintiff fails to conclude) due probably to injury to the rind" (R. I. 870).

With apparent intent, in the discussion of this statement (Plffs. Brief, p. 10) plaintiff refers to the author of the last statement as "one investigator who had been trying various disinfectants". If this means anything in connection with the plaintiff's studied effort to prove that there was in progress a search for a blue mold remedy, it means to imply that Fawcett was an investigator trying to find a successful chemical treatment for blue mold. And this is what the Circuit Court of Appeals was led to think as evidenced by the fact that in its Opinion it listed Fawcett as one of the thirteen investigators that were supposed by the Court to have

been engaged in such an investigation over a long period of years, although none of them ever engaged in any such investigation as we have pointed out in our main brief (pp. 79-88).

Referring to plaintiff's own exhibit No. 15 (R. II. 864) the Fawcett paper from which the plaintiff quotes and to which the plaintiff refers in such striking fashion, we find that that paper was solely and avowedly a discussion of "stem-end Rot and Gummosis", two diseases originating in the orchard and discussed as to be attacked by proper care of the orchards, pruning, spraying and cleaning up. Brief reference is made to experiments in treating the wash water and in that connection the casual, inconclusive comment is made that the chemicals seemed to injure the rind and increase the amount of blue mold decay (R. II. 869-70). This trial of chemicals for a disease that starts in the orchard and therefore can not be controlled by careful handling of the fruit could raise no inference of any search for a blue mold remedy. And if the plaintiff had not seen fit to present this Fawcett statement as though coming from an investigator working on an alleged blue mold search, the matter would not have called for this attention. But it is just such statements in connection with quotations shown without any context that seem to call for this extended Reply Brief.

Next plaintiff quotes Powell as saying again in 1911 just what he said in 1907, when as manager of the Citrus Protective League of California he was discussing various kinds of decay that could be treated by the use of copper sulphate or permanganate of potash, but gave the caution not to rely on these antiseptics to kill the blue mold spores in the wash water (R. II. 883, 887).

On page 51 of its brief, plaintiff quotes what some person, there unnamed, said in 1912 to this same effect

that nothing had been found to kill the blue-mold spores in the wash water without injuring the fruit. Reference to the context shows that this again was a simple repetition of the original published statement in the Powell report of 1907. This 1912 repetition was made by H. J. Ramsey, a co-worker with Powell, in the course of an address to the Florida State Horticultural Society in which he made, and supported by proofs of actual trials of great number throughout several seasons, the statement that,

> "It has been fully demonstrated that fruit can be carefully picked and packed in a commercial way so that it will carry to the market in sound condition and hold up for a sufficiently long period to allow for its distribution and consumption."

Next the plaintiff quotes from the literature of 1914 a part of a single paragraph, with the plain design of raising an implication of a search for a new remedy. The words quoted by the plaintiff are,

> "As yet no disinfectant has been found which proves effective against blue mold."

In the context, these further words follow,

> "Extensive investigation of this phase of the subject has shown the spores to be so resistant that any solution used to destroy them must be of sufficient strength to injure the surface of the fruit."

This reference to disinfection is found in a Department of Agriculture bulletin of 85 pages written by Stubenrauch, Ramsey, Tenny and others as a report upon

> "Factors governing the successful shipment of oranges from Florida"

(Plffs. ex. 24, R. II. 967).

That bulletin of 1914 is a most exhaustive showing of the adequacy and great economic success of the

"careful handling" program. It is filled with tabulations, graphs and photographic illustrations, as well as extended statements of fact which are most convincing to the effect that no search for any other remedy is being made, and that there was no occasion for any. In summarizing the proofs derived from the activities and observations of the workers of the Department of Agriculture from 1907 to 1914, the bulletin says:

> "The experiments of the Bureau of Plant Industry during the past seven years prove conclusively that the condition of the fruit after arrival in market depends largely upon the character of the work done in the grove and the packing house; that it is possible to so conduct the operations of picking, packing, and shipping as to inflict a minimum of mechanical injuries; and that uninjured Florida oranges can be placed on the market in practically sound condition even in seasons of very high decay. Practically all loss from blue-mold decay, such as has occurred in the past, can be eliminated."

(R. II, 1046-7).

The statement quoted in part by the plaintiff as above referred to appears in a section of the bulletin entitled "Influence of cleaning operations upon decay." Current practices in the washing of fruit are discussed; frequent changes of the wash water are recommended to avoid accumulation of blue-mold spores. And then the warning is added that it had not been found feasible to kill the spores in the wash water because what would kill the spores would injure the surface of the fruit. The statement that this fact has been determined by extensive investigation plainly relates to the investigation that had been made in 1907 or earlier.

The plaintiff points out in its brief, at page 91, that it is shown by newly found records in the Depart-

ment of Agriculture that in 1909 Powell made mention of the fact that two years earlier Dr. Wheeler had worked extensively

> "On the affect of different fungicides on the death of penicillium."

This fixes 1907 or thereabouts as the time of the experiments which satisfied the Department of Agriculture that no reliance could be placed on the killing of the blue-mold spores in the wash water. And this, as we have seen, is the information that was passed on from year to year by Powell and his assistants in the work of "careful handling". Therefore, instead of tending to prove what the Circuit Court of Appeals saw as a twenty-year search for some other remedy than "careful handling" these statements, which are all that the plaintiff has been able to find upon this subject in its voluminous record go to show that there was no search. The whole record, read understandingly, shows that the point about killing blue-mold spores as a matter of disinfection was tested out and abandoned as early as 1907, and a warning held out from year to year by the crusaders for "careful handling" to the effect that the avoiding of injuries was the thing; and that carelessness in handling could not be off-set by the project of trying to kill the spores in the wash water.

There is no implication in this that the experts working in the orange packing industry failed to conceive that oranges could be preserved as other food stuffs are preserved against mold for a limited period by borax application. And it is manifest that with the Department of Agriculture holding out the logic and sufficiency of "careful handling" no one would be apt to be looking for another blue-mold preventive. Certainly if the plaintiff held to the theory that the Circuit

Court of Appeals was led to adopt, that the thirteen experts named by the Circuit Court of Appeals, or anyone else was actually searching for such a remedy, the plaintiff should have come forward with some direct evidence of such search.

Proceeding with its showing of what it claims to imply a search for a new blue mold preventive the plaintiff on page 51 of its brief quotes another unnamed authority as saying in 1914, "It is not believed any solution of penetration and disinfecting power to kill the infection and not injure the fruit will be found, but further work in this direction is being carried on." Is it too much to say that the foregoing amounts to a representation to the Court that the person so quoted was searching for a new blue mold preventive and was representative of mistrust of the adequacy of careful handling?

But reference to the publication from which this quotation is taken shows that it has no reference to blue mold. It is an article from Porto Rico discussing the occurrence and treatment of diplodia rot or gummosis, a disease that originates in the orchard and therefore can not be guarded against by careful handling of the fruit. The author says that while trial had been made of dipping the oranges into a 2% solution of copper sulphate for two minutes, it was hardly expected that this would give beneficial results "as such disinfection must be very superficial at best and hardly able to penetrate to the point of infection" which having started in the orchard would be apt to be well into the tissues before the disinfecting treatment in the packing house. Therefore the article was devoted to measures to be taken in the orchard with a view to getting rid of the infection on the trees, and made no reference to blue mold.

After further effort to find something in the record to support the theory of a search for a new remedy the

plaintiff finds and brings in a publication of 1915 descriptive of the citrus industry of California (Plffs. Ex. 33, R. II. 132). Evidently this is an exhaustive work since the plaintiff quotes from pages ranging from page 306 to page 395 containing references to various kinds of decay producing organisms and diseases that affect oranges. What is quoted on page 51 of the plaintiff's brief from this publication is the following: "The application of fungicides to the trees or disinfectant to the wash water does not control the disease."

Since this chapter of the plaintiff's brief is devoted exclusively to an attempt to show a search for a new method of prevention of blue mold, it is fair to assume that the plaintiff by listing this quotation of 1915 in its summary of alleged proofs, intended it to convey the implication of search for a blue mold preventive. As a matter of fact reading of the context shows that the quoted statement had no reference to blue mold. The statement had reference to melanose and stem end rot, both described as orchard diseases caused by the same fungus and to be controlled by orchard care (R. II. 1134-5). All that is said in this exhibit about the preventive of blue mold is the following:

> "The universal preventive for these decays is careful handling of the fruit in field and packing-house, which, if conscientiously enforced, will reduce the losses to a minimum." (R. II, 1134).

The plaintiff then proceeds with a quotation from a publication of 1921: "You can not depend upon blue stone in the wash water to kill blue mold." This was a statement by H. J. Ramsey and is a plain repetition, limited to one chemical, of the original statement of 1907. The reason for the repetition in 1921 is plain. Mr. Ramsey at that time was field manager of the California Fruit Growers Exchange. On December 20, 1921,

he sent out a circular in which he called attention to the prevalence of brown rot, an extremely contagious fungus, and warned the growers to be prepared to add blue stone (copper sulphate) to the wash water in sufficient strength to kill all brown rot spores or fungus. Specific directions were included in the circular (Plffs. Ex. 62, R. II. 1329). The next day, December 21, 1921, Mr. Ramsey sent out another circular addressed "To all orange shippers" calling attention to weather conditions favoring decay and stating that "especially following recent heavy rains careful picking and field handling is absolutely essential to the maintenance of satisfactory keeping quality." Many points were emphasized as bearing on the prevention of blue mold decay and then, probably to prevent possibility of misunderstanding of the blue stone circular of the previous day, the writer added the caution against depending on the blue stone in the wash water to kill blue mold spores. With a great number of orange experts actually on the witness stand and others available to this plaintiff, that did not hesitate to bring a large number of witnesses from California and Florida to the trial, such items as these are feeble efforts at establishing search.

The plaintiff ends this list of proofs with the quotation from plaintiff's exhibit 41, a publication of 1923, that "chemical disinfection in the washing tanks is not effective" (R. II. 1211). Here again a fog is raised with apparent deliberation. The publication quoted from is a Department of Agriculture bulletin by John R. Winston, pathologist, and others, entitled "Commercial Control of Citrus Stem End Rot." It is made perfectly plain that when the authors said that "chemical disinfection in the soaking tank has not been effective" they were talking about the control of stem end rot, sometimes referred to as Phomopsis or Diplodia which, as has been noted before, develops in the orchard, and be-

fore the fruit reaches the packing house has penetrated into the tissues too far to be reached by disinfectants in the soaking tank. There is not a word in this bulletin on the subject of blue mold except a footnote which says:

> "Besides the two types of stem-end rot, Penicillium (blue mold, green mold, blister rot) is a common cause of decay. It can develop at lower temperatures than Phomopsis. It may enter at any point where the skin of the fruit is cut or bruised. Its development is very rapid, the primary infections showing as a rule within two or three days after entrance occurs. It requires different procedures for control from the stem-end rots. Briefly, the fruit must be kept free from bruises and scratches of all kinds and from long continuance of surface moisture—from rain or dew, from washing, or from condemnation (sweating) and it should be held at low temperature (40° to 45° F.). R. II. 1201).

Plainly therefore this quoted bulletin simply adds emphasis to the proposition that in 1923 the old, original, logical method of avoiding blue mold rot by avoiding injuries was not considered open to question and as presented throughout the literature of the industry and practiced throughout the length and breadth of the industry, served to show that no need for anything else was being felt and that no search for anything else was being made.

In its Statement of Facts under the heading, "The Long and Fruitless Search for a Remedy" (pp. 6-23) the plaintiff goes over the same quotations that we have reviewed here as repeated on pages 50 and 51 of the plaintiff's brief, and adds other detached quotations which tend to prove nothing except the development

and acceptance of the careful handling program and a progressive experience of the industry and Department of Agriculture workers with respect to it and the things that went with it; the teachings of experience in the matter of washing the fruit and the importance of drying it; like teachings of experience with respect to ordinary sanitary practices during all contacts with the fruit; and like teachings of experience with respect to the use of various detergents and disinfectants according to the conditions met with from time to time and in different localities, and with particular reference to the organisms and diseases variously affecting the fruit, always keeping in mind the fact that blue mold was the one destructive organism from the attack of which the fruit was safe if kept free from injuries, and so needed no antiseptic or preservative.

Defendant's Previous Showing of Non-Invention Confirmed By Supplementary Records From Department of Agriculture.

The plaintiff has seen fit to argue at length from the Department of Agriculture records which were not found at the time the Secretary of Agriculture undertook to certify the Department's records for defendant's use in the trial of this case (R. II. 1475-1480) and which recently have been found and a certified copy filed in this case by *amici curiae* for convenience of reference. These supplemental records, are not essential to the showing of the incomplete record originally certified, which was to the effect that upon suggestion of the blue mold problem, workers in the Department of Agriculture laboratories proceeded promptly and naturally with no indication or claim of inventive ingenuity, to extend to oranges by simple demonstration a preservative use of borax then thoroughly well understood in the art of food preservation.

While through defects of the Department's filing system the defendant at the trial had to be content with a plainly incomplete record, that partial record went far enough to show the entire simplicity of the work; and to show that the Department workers were doing exactly what any one skilled in the art might be expected to do and exactly what the patent in suit recommends to be done. That partial record ends at a time when a definite trial of the very process of this Brogden and Trowbridge patent was in progress. If the claimed process is effective, the trial there recorded was effective. That partial record shows that Gore and Scott were not making trials of anything unique or savoring of invention. They were trying various strengths of solution and various lengths of time of dipping or soaking. They were trying out the effect of different strengths and different times of application in the case of oranges previously inoculated with blue mold spores, and separately they were trying out the same thing in the case of oranges first subjected to the action of borax and later inoculated.

The final notes of their incomplete record showed that on January 9, 1905, the workers were awaiting "the effects of inoculation with fungus spores on the inoculation places after dipping for ten minutes in saturated boric acid solution", this particular experiment having started January 5, 1905 (R. II. 1479). Turning to the recently found continuation of these records, to which the plaintiff makes lengthy reference in its brief, we find official correspondence and records of these tests, which make clear every material phase of this Department work with borax. They show that there was nothing in the nature of the fruit to prevent the naturally expected results of the borax application so far as related to prevention of mold. They show a record of conclusions so strikingly similar to the claims of the patent that they would be startling if it were not for

the fact that the trials made and the results secured by Gore and Scott in 1905, and the like trials made and results secured by Brogden and Trowbridge in 1923, if they made any, were so ordinary from the standpoint of any one skilled in the art of food preservation as not to cause any surprise in a thoughtful mind.

Brogden and Trowbridge in their patent application say that it is useful to subject oranges to the action of an aqueous solution of borax or boracic acid so as to impregnate exposed rind or skin tissues and render them resistant to blue mold decay. They claim the use of this process with any strength of solution, any duration of dipping, and any temperature of solution short of that which will cook the fruit. They point to alleged value in any weakness of solution down to 2% or less, and any strength up to the 20% or more which can be obtained in hot water, and express some preference for the 5% which is a substantially saturated solution in water of ordinary temperature (R. I. 586, 591, 598). With all this show of elaboration neither the patentees nor any one for them was called to show whether they ever actually made any experiments, or whether, having some acquaintance with the prior art or other hint of the dipping of animal or vegetable substances into a borax solution for its preservative effect, they hastened to make up this collection of vague claims and sweeping assertions and ask for a patent on it. We believe that sufficient justification of this comment lies in the fact that the plaintiff limits its recital of the origins of the alleged invention to the statement of the secretary-treasurer and general counsel of the plaintiff company that when they decided to offer a preservative as a part of the sales talk of their packing house equipment business, borax was recommended by Brogden and Trowbridge and accepted by the company and put out by it in the guise of Brogdite.

While likewise there is no suggestion of invention in the Scott and Gore experiments, they do show a serious effort to work out a simple and *definite* practice to be recommended in case the project of preserving oranges as many other foodstuffs are preserved should be found a suitable thing to be recommended by the United States Government.

While it was concluded that the sending out of oranges branded as containing borax was decided not to be a suitable thing to be recommended by the United States Government which at the same time was fostering the doctrine that no quantity of borax or boracic acid however small should be permitted in foodstuffs, nevertheless the suitable practice was worked out and ever since has been a matter of record in the Department of Agriculture. And it was not worked out through the use of any inventive genius. Also it was the subject of open discussion and extended correspondence between different persons.

These Tests Show How Naturally and Easily the Full Point of the Claimed Process Was Reached in 1905 Without Invention.

Without reviewing many of the interesting showings of the Gore and Scott record, it may be noted that while the partial record certified by the Secretary of Agriculture and used by the defendant at the trial stopped on January 9, 1905, the supplementary record now available and argued from in plaintiff's brief, shows that the experiments under way at the conclusion of the former showing, worked out to the fullest extent that could be expected from this procedure under the most favorable circumstances, so that Gore and Scott recorded the following conclusions:

"Exp. 8. Effect of After Inoculation * * * The experiment indicates that by the ten minute dip in saturated boric acid solution, the abraded portion of the fruits will be protected from decay caused by spores falling upon them after the boric acid treatment" (Sup. Rec. 38).

"Exp. 10. Boric Acid ½ saturated. Started Jan. 6, 1905 * * * The results of this experiment show that though not absolutely inhibitive, a marked retardation of the growth of the mold is caused by half saturated boric acid solution" (Sup. Rec. 39 *).

These records show that William A. Taylor was the Pomologist at Washington in charge of field investigations, and that G. Harold Powell, then in California, was Pomologist in charge of fruit storage investigations.

January 5, 1905, Taylor wrote to Powell that the dipping in borax after inoculation showed striking results from the first in the line of preventing rot development. Thus early in the experiments he noted that a few crystals of boric acid could be seen on the fruit which made it almost certain that a good deal of boric acid would be visible if the use of a saturated solution was found necessary. He said that tests with various strengths of solution were under way, and added:

"It would, of course, be unfortunate to suggest any processes that would be likely to cause a scare among consumers, even though it should be baseless, for it is difficult to correct misapprehensions of that sort if they once gain headway through the press."

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*References in this form are to the pages of the printed copy of the completed record of the 1905 work of Department of Agriculture with oranges and borax.

In the same letter Taylor remarked on the obvious expedient of rinsing the fruit to remove the visible borax; (Sup. Rec. 19), and this, it will be recalled, is one of the suggestions in the plaintiff's patent. An indication of Powell's attitude appears in his reply to Taylor under date of January 11, 1905, in which he reminded that "people shy at the word borax nowadays" and suggested that if tried commercially it would have to be done "on the quiet." Also Powell pointed out that at that time only about 5% of the oranges were washed and that he doubted the advisability of any liquid disinfectant, which would require the enlargement of packing house capacity and much added labor (Sup. Rec. 27). Powell suggested the same considerations to Gore in a letter of January 13, 1905. Experiments were proceeding under the direction of Taylor in Washington, but Powell wrote this warning:

> "Commercially I am afraid of the effect of such a treatment unless it is handled with great care. The trade shies at its own shadow and a borax panic could easily be worked up by the dealers in foreign lemons who are fierce competitors with the Californians." (Sup. Rec. 30).

The tests and the correspondence proceed with the care expected of trained workers to the point where on April 21, 1905, Gore makes his final report so far as disclosed by the records at hand, in which he shows that the excess crystals can be removed by rinsing without prejudicial effect upon the action of the boric acid after soaking (Sup. Rec. 57). While no further papers have been produced to record further discussions and final decision with respect to any recommendations of adding a borax or boric acid preservative to oranges, we have pointed out that Powell raised

objections from the start and that he as well as Taylor expressed fear from the pure food standpoint.

These records bear out completely the testimony of Gore that when he reported to Taylor and Powell on these tests there was opposition because of the idea of anything suggesting that chemicals had been used appearing on the wrapper or on the orange and that Powell deprecated the value of using boric acid for that reason (R. I. 229).

We have offered reminders of the violent opposition of that day to the use of borax as a preservative in or upon foodstuffs, referring to hearings as early as 1904 upon the Pure Food Bills and the amendment suggested by Congressman A. P. Gardner and made a part of the 1906 law whereby borax and other like preservatives could be used on foodstuffs if necessarily removed in getting the product ready for consumption and a statement of the preservative and directions for removal carried on the article or its container (Our main brief 105-115).

Coming to the last of the recently found records we see Powell the pomologist writing to Shamel, physiologist, on November 8, 1909, in reply to some suggestion about the use of bicarbonate of soda for blue mold. Powell here makes entirely certain his attitude toward the use of chemicals against blue mold. He says:

> "I was interested in your remarks regarding the use of sodium carbonate solution for blue mold. I do not think there would be very much trouble in finding some of these solutions, but as I wrote you before, I think it would be distinctly detrimental to the industry if a fungicide should be adopted even to cut out decay in the scarred and bruised lemons to which you refer. There

would certainly be a let-up in the practices that are fundamental in keeping the product sound if the average grower could depend upon the fungicide to overcome a definite piece of careless work. Just as soon as the grower lets up in one fundamental he always lets up in others. For that reason I have always felt like holding rigidly in California to careful handling as the only means of retarding the common blue mold. By doing so I am satisfied that it has had a splendid effect upon other operations in the lemon industry. There are some individuals who might be able to use fungicides and who would not let up, but they are few and far between" (Sup. Rec. 61).

There is enough here to dispose completely of the plaintiff's insistent contention that when Powell writing in 1907 said that nothing had been found to kill the spores in the wash water without injuring the fruit, and when Powell's assistants on several different occasions when addressing Horticultural Societies and others, repeated this statement they were implying that they had no idea of the feasibility of preserving oranges to a degree by borax application.

On October 26, 1909, Powell wrote to Shamel that he had been asked many times to work out a method of killing blue mold in the wash water; that two years earlier Dr. Wheeler worked extensively on the effect of different fungicides *"on the death of penicillium"* and that he was convinced that this undertaking was on the wrong track "and the thing that was to be constantly driven home was the relation of a sound orange or lemon to freedom of decay * * * I wish you would think along this line somewhat from the standpoint of general policy in connection with the industry and see if you do not agree with me" (Sup. Rec. 59).

The plaintiff argues at great length that to say that the Department of Agriculture knew all that the Department records indicate about the simplicity of retarding the growth of mold by applying borax to the rind or at least the exposed rind tissues, and still represented through Powell and assistants that there was no use to try to kill the blue mold spores in the wash water, is to charge that for many years the Department of Agriculture habitually misrepresented facts and promulgated false official statements; or in other words to charge that "these experts, with the official sanction of the Department of Agriculture must have been guilty of practicing a barefaced and expensive fraud upon the American people in whose service they were, a fraud which they kept alive by systematic official misrepresentation throughout the better part of twenty years" (Plffs. brief 87-90).

It would seem that here, as elsewhere, plaintiff's conception of the ethics of this matter is no sounder than plaintiff's law.

Plaintiff says that it can not be true that the Department of Agriculture knew anything about the feasibility of applying borax to the exposed tissues of oranges as a retardant of mold, although it is set forth in written Department records made in the year 1905, since the Department officials would have been in duty bound to advise orange growers that they could retard the growth of mold by dipping their oranges in a solution of borax, and should put all their oranges through a borax solution in order to reach any minute cuts, punctures or other wounds that might have been incurred by any of the oranges despite the practice of careful handling.

With tremendous agitation in progress against any such use of borax, with uncertainty until after the enact-

ment of 1906 as to whether the smallest quantity of borax would be permitted without having its presence indicated, accompanied by directions for removal, and with the laws of various States, and a regulation of Germany at least, prohibiting the use of borax under any circumstances, and with Powell's additional objection to anything that might cause a let-down in careful handling, the ethics of the Government's position does not seem to be so clearly reprehensible as suggested by the plaintiff, and hardly calls for further consideration.

The United States Department of Agriculture was representing that the blue mold problem had been solved effectually by the working out of the careful handling program under which throughout California and Florida oranges were being handled and marketed without substantial decay (Our main brief 16, 75-88).

The analytical chronology appended to our main brief gives some view of the persistency of this teaching. The adequacy of the work is pointed out well in the testimony of plaintiff's expert, William S. Hart, and in his writings (Our main brief 76-79).

Plaintiff has dwelt extensively on the claim that in large scale operations much wounding of fruit is unavoidable. But this is directly contrary to the testimony of plaintiff's own expert Hart, who said that until 1924 he had operated *a large packing house* in Florida for many years, having been fifty years in the business, and had no trouble with blue mold. Moreover, plaintiff's bald assertion that such extensive wounding of oranges is unavoidable is directly contrary to the teachings of the entire great volume of prior art publications which the plaintiff offered. In our main brief (p. 78) we have made brief reference to some of these teachings.

Manifestly conditions might arise at any time when carelessness would come in and have its effect. The

prior art publications made reference not only to the possibility but also to the actuality but continued to teach that the thing to do is to meet such temporary conditions by renewed emphasis on careful handling and not by accepting carelessness as inevitable and looking for some other remedy (R. II. 941). Every witness who touched on the subject at all gave the strongest endorsement to careful handling. A. B. Michael, defendant's leading authority, never used borax even when the Government recommended it and plaintiff's patent claims were unknown. And it is highly significant that when the defendant's packing house managers were furnished with the Government's circular and left to their own devices, borax was used in only ten houses out of twenty-three owned or managed by the defendant (R. I. 118, 185).

Defendant's Tabulations Represent the Only Serious Effort Indicating Results From Use of Borax and They Negative the Claim of Revolutionary Results.

And it is noteworthy that the only serious attempt at a showing of detailed decay records appears in the defendant's tabulations covering the entire citrus seasons of 1924-25 and 1925-26, the period from defendant's first use of borax in any packing house to the time of trial. And if these tables are examined in connection with all of the testimony in the case on the subject of decay it will be seen that it would take a vastly greater effort than the plaintiff has seen fit to make to give to the Court any dependable proof as to even the approximate value of this borax treatment as against the practices in vogue at the time of this patent and for a long time prior thereto.

Plaintiff's own showing from various witnesses is that the amount of decay of oranges varies greatly from year to year. And it is taught throughout the plaintiff's prior art publications that this is a condition that must be faced. The fact of such necessary variations in nature is a truism. Various plant and fruit infections show themselves with no ascertainable approximation of certainty of time or place. Sufficient emphasis is given to this point by reference to the testimony of S. O. Chase, an important expert for plaintiff, who said that under prior art "decay varied considerably from season to season, say from 5% one season to a higher percentage some other season, but we had a heavy percent in individual cars"; total probably not as high as 10% or 12% in any one season, but considerable variation in different seasons according to weather conditions (R. I. 65). Then what can be deduced from the testimony of the San Antonio Fruit Exchange witnesses and the Mutual Orange Distributor witnesses who had helped to finance Brogden and came all the way from California to testify to reduction in decay and undertook to attribute certain definite benefits to borax by claiming variation in decay no greater than often occurs from one year to another year, with no borax use in either year? The importance of this query is emphasized when we see that these California witnesses testified without any tabulated or other written data, and testified simply about difference in decay from one year to another, without distinction as to cause of decay; and further that after Knox the leading witness (R. I. 24) had testified vaguely without written data he was recalled with notice to bring in a record to which he had made reference (R. I. 52) and showed by that record that with added use of borax, together with the paraffin coating in 1925-26, there was a record of more than 11% decay, as against 6.4% decay the preceding year with less extended use of borax and paraffin (R. I. 52).

Summary.

FIRST. We have shown that the plaintiff's brief makes no serious effort to meet the position of the lower Courts that, viewed retrospectively, "the claimed process would seem to be wanting in invention over the disclosures of the prior art", and particularly has failed to point out anything novel in the claimed process or to show any activities of the patentees to indicate the calling into play of inventive faculties.

SECOND. The collateral assumptions listed in the plaintiff's brief (pp. 4-6) as those upon which the patent was upheld may be reviewed as follows:

1. Blue mold decay set up as the bane of the citrus fruit industry for many years prior to the invention.

We have pointed out how fully the publications offered by the plaintiff demonstrated that this condition was eliminated by careful handling practices many years prior to the patent in suit and that plaintiff offered no witness to contradict these teachings. Plaintiff rested with vague testimony of great losses from all kinds of decay without distinction at indefinite times. And when definite testimony came out it squarely contradicted the assumption that blue mold continued the bane of the industry. After producing all of these teachings and statements about the virtual elimination of the blue mold problem, the plaintiff did not have the boldness to offer evidence to the contrary and must be presumed to have had none. The Courts below were simply confused to the point of adopting as typical and continuing some loose statement of conditions in the early years when there were catastrophes from decay of various types including much loss from blue mold decay.

2. Search for a new method of prevention of blue mold. In both briefs we have shown the fallacy of this assumption. And in this brief we have pointed out that the plaintiff's brief absolutely ignores the showing of our main brief on this point.

3. The alleged long-felt want. This point is sufficiently referred to in our reference to the last preceding point.

4. Surface injuries inevitable in large-scale methods of handling fresh fruit. This is directly in the teeth of the plaintiff's own showing in its careful handling publications; and is plainly contradicted by plaintiff's own expert, William S. Hart, for many years owner and operator of a large packing house.

5. The present patentees were the first to recognize the plan of impregnating wounded tissues to prevent the growth of mold. Plaintiff reasserts this point while ignoring the unanswerable showing to the contrary contained in our main brief, ignoring the fact that in 1905 Government experts with no showing of invention pointed out and developed the feasibility of this practice, which we have shown was not recommended to the public promptly, first, because of the overwhelming public prejudices of the day against any showing of preservatives in food, with particular emphasis on borax and boric acid which were so much used because of their mildness of antiseptic quality and alleged harmlessness; second, because of the Federal regulation with respect to the use of borax and similar preservatives which was a matter of the greatest notoriety and the subject of congressional hearings and much public comment in 1905, and by 1906 actually

enacted into law; and third, because the Department of Agriculture had determined the commercial success of avoiding blue mold by the avoiding of injuries. It would not be a violent assumption to say that the adding of borax to oranges by some degree of impregnation, with a statement of that fact on the wrapper or other container accompanied by directions for removal of the borax, would have been recommended if the Department had not had available the logical and successful preventive of careful handling which not only did not involve this manifestly obnoxious labelling procedure but also was fundamentally of boundless importance to the industry in promoting the distribution of the substantially perfect fruit that is seen on every hand in every section of the country regardless of distance from source and which is fast becoming familiar likewise in all of the markets of the civilized world.

6. Such treatment not taught by the prior art.

Sufficient answer to this is that the Courts below found that "the claimed process would seem to be wanting in invention over the disclosures of the prior art". Added to this is the unanswerable showing of prior patents and prior practices.

7. That the evidence of prior uses is insufficient.

There is no gainsaying the use proved by Frank C. Bishop who was brought from California by the plaintiff and kept in New York while the plaintiff's case was being presented. The Courts below accepted the evidence of prior uses but looked on those uses as not of the intent and scope of the claimed process. Under the patent law the condition of the prior art is such an element of patentability as to call for the same attention in an Appellate Court as is given to the evidence of use of the inventive faculty. With the Circuit Court of Ap-

peals presenting a confused view as to what it saw in the evidence as to prior uses and with no definite findings as to any of these uses, this is peculiarly a case for unhampered review of the evidence to which we have made full reference in our main brief (pp. 51-71).

8. That the invention was eagerly seized upon by the industry and lauded by experts. We have shown in our main brief (pp. 88-92) that this assumption is without warrant. The assumption of need and search having been shown to be erroneous, commercial success is not a matter for consideration. But if it be considered it is found that the plaintiff has made it impossible of measurement. What the plaintiff did was to put over to a degree, the attractive project clearly set out in its license agreements in evidence under which it furnished packing house equipment, not covered by the patent in suit, together with licenses for the use of two disguised treating processes, Brogdite (borax) and Brogdex (a paraffin composition) on the attractive plan of furnishing and maintaining all of the equipment and furnishing all of the ingredients except water, with no requirements of capital investment by the licensee who, as rentals and royalties, simply pays 6½¢ per packed box of oranges up to a certain point and beyond that 5½¢.

When the Department of Agriculture through all this propaganda for the preserving of oranges as against ordinary disinfectants, a matter on which the plaintiff spent more than a million dollars, was faced with inquiries about the preserving of oranges, knowing what all experts know about the preservative value of borax and having tried out borax on oranges successfully as a preservative in 1905, and Winston of the Department having used it successfully in 1918, experts of the Department naturally made public reference to borax and

gave it through endorsement as the preservative naturally to be selected if in view of the agitation for preserving oranges any antiseptic were to be used with the design of incorporating it into the rind so that the oranges would be held out as preserved.

And the plaintiff offered testimony to show that when the California Fruit Growers Exchange used borax under the Department of Agriculture suggestion they held the oranges out as "borated", presumably pursuant to the existing requirements of the Pure Food and Drugs Act of 1906 (R. I. 32). It requires little strength of imagination to apprehend what would have been the effect of holding out oranges as borated in the early years of this century when the pure food agitation was at its height.

9. That the citrus growing world found in this patent what it had been earnestly and unitedly searching for during a quarter of a century. This repetition of the well exploded theory of search profits nothing. But we venture to recall again that disregarding the impetus that the Department of Agriculture was led to give to the use of borax, the thing to which the plaintiff introduced a very limited portion of the citrus growing world was a remarkably clever business device more attractive than creditable under which the siren song of Brogdite and Brogdex was made use of to secure the introduction of the plaintiff's system of packing house equipment at a monthly rate for equipment, materials and use of process, an approximation of which is suggested by the fact that the standard license form offered in evidence by the plaintiff fixes the rate at 6½¢ per box, or $26,000 per month for the 400,000 boxes per month at which point the rental-royalty rate drops to 5½¢ per box. And we recall further that the extent of adoption of this system established by the plaintiff at the trial com-

prised two licenses to two associations in California that had advanced money to the enterprise (R. I. 94, 27, 89) and a total of fourteen customers in Florida having about twenty-seven packing houses, thirteen of which were the Chase houses which had consented to pay a royalty on a modified basis after getting into the use of borax at the suggestion of the Department of Agriculture (R. I. 108).

Conclusion.

We trust that the length of this presentation will justify itself through the pointing out of facts to supplant the network of generalizations which we submit represents an entanglement of error.

Because of the great scope of the record which we have had to discuss, because the Opinions of the Courts below do not set out factual findings unless by remote inference that may be deemed to be implied in general conclusions, we close our references to the evidence by pointing out again that although the fallacy of the underlying assumption of search which controlled the decisions below, was analyzed exhaustively in our main brief, with precise references to the record, the plaintiff replies with what amounts to a bald assertion that satisfaction means search, and that enthusiastic endorsement of one thing means an expression of desperate need for something different. Plaintiff after placing this construction on its own mammoth proofs of the success and acceptance of "careful handling", the thing that has revolutionized the nation's fresh fruit industry, submits, as we have shown, one other category of evidence of search. And because of the time and space required in restoring to their context the misleading statements in this second category, brought forward to support plaintiff's proposition that large-scale wounding of oranges

was recognized as inevitable and that therefore continuous search for a chemical preventive of blue mold was carried on from year to year by the experts and from year to year found "worse than useless",—we summarize that categorical phase of the plaintiff's argument as it appears in the light of the respective contexts, by pointing out that we have shown in this brief that of the twelve statements quoted by the plaintiff as categorical affirmance of search for a chemical blue mold remedy, eight simply comprise the statement and re-statement by Powell and his associates in the careful handling work, Tenney, Stubenrauch and Ramsey, and their firm supporter, plaintiff's expert witness Hart, of the fact first set out in the report of 1907 under the authorship of Powell, Tenney, Stubenrauch and others, which was to the effect that blue mold spores could not be killed in the wash water without injury to the rind of the fruit (R. I. 709); and that the remaining four statements so adduced by plaintiff as affirming a continued search for some new remedy, while brought forward as a part of this category of proof, did not have the remotest relation to that subject, and that, on the contrary thereof, in each case had specific reference to chemical treatment of oranges for diseases which penetrate the tissues while the oranges are growing, and which are not dependent for access upon wounds in the rind. The four statements last referred to are items 5, 9, 10 and 12 of the twelve categorical statements of this nature set out on pages 50 and 51 of the plaintiff's brief as bearing upon "the effort to minimize the losses due to blue mold decay". The extent of the plaintiff's reliance on this misleading showing is emphasized by reference to the more extended discussion of these detached categorical statements which begins on page 8 of the plaintiff's brief.

When the thing actually referred to is a problem of an altogether different nature from the blue mold problem, there is manifest significance in the repetitious use of these four categorical statements, of which the following is typical:

> "In 1911, one investigator, who had been trying various disinfectants, reported
>
> > 'Some of the chemicals we used appeared to increase the amount of bluemold decay due probably to the injury to the rind'" (Plffs. Brief p. 10).

As we have shown, this investigator was working on an entirely different problem. Naturally blue mold increased with injuries to the rind.

In closing we submit that there lay at the heart of the misconception of the Circuit Court of Appeals the idea that borax is what the District Court referred to as a "specific for the blue-mold decay of citrus fruit" for which, for a quarter of a century, continuous search was made. It is not even claimed that borax partakes of the nature of a "specific". It has a certain measure of value as a retardant of mold. But it is plain, in the nature of things, that the various causes of decay of fresh fruit never can be avoided completely. The nearest approach to perfect control of any decay is seen in the control of blue-mold decay by the avoiding of injuries.

As a concluding reference to the alleged invention, there is a substantial parallel of reasoning in the recent case of *Powers-Kennedy Contracting Corporation et al. v. Concrete Mixing and Conveying Company,* decided by this Honorable Court, December 15, 1930, and reported in The United States Daily of December 16, 1930.

And as bearing upon the submission of the plaintiff's conception of the application of borax to oranges

as a preservative, as an alleged invention, without a word of evidence as to what manner of inventive effort brought forth this conception in the minds of the patentees and warranted their many claims of infinite aggregate scope, an interesting discussion by Lord Herschell is found in the House of Lords case of *Longbottom v. Shaw,* 8 R. P. C. 333. That case sustained the refusal of a patent application on the ground that it was "an adaptation of a well-known idea in a well-known manner, for a well-known purpose, not involving any invention." As an appendix to this brief, we have printed Lord Herschell's discussion bearing on the absence of evidence in such a case "of either experiment, or investigation, or thought on the part of the patentee."

Respectfully submitted,

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APPENDIX.

Longbottom v. Shaw, 8 R. P. C. (English) 333.

This patent case involved the question of the validity of a patent for improvements in reels or frames for holding pile or other fabrics. The invention claimed by the plaintiff consisted in forming a row of hooks upon a foundation piece of metal, then in attaching the row of hooks so formed to a reel or frame for the purpose of holding pile. Reels or frames with a row of hooks were admittedly well-known at the date of the patent and it was also admitted that the idea of attaching a row of hooks to a strip of metal so that the strip of metal with the hooks attached could be applied when required, was not new, though it had not been applied to these reels or frames.

There was evidence that an improvement had been effected by the plaintiff, and that his article had supplanted the old article in the market, but there was no evidence that the defects of the old article had been much felt or had caused a demand for an improved article.

Held that there was no more shown than an adaptation of a well-known idea in a well-known manner, for a well-known purpose, not involving any invention, and that the improvement in reels or frames for which the patent was sought, lacked subject-matter.

The case was carried to the House of Lords, and the refusal of the application was sustained by Lord Herschell, who said (pages 336 and 337):

"Great reliance is placed upon the fact that when this patent was taken out and frames were made in accordance with it there was a large demand for them. It is said that at all events in the experience of certain houses dealing largely in these matters, the new apparatus, as it is called, of the Plaintiff superseded the one

formerly in use. My Lords, I do not dispute that that is a matter to be taken into consideration; but again, it is obvious that it cannot be regarded in any sense as conclusive. I think that its value depends very much upon certain other circumstances. If nothing is shown beyond the fact that the new arrangement results in an improvement, and that this improvement causes a demand for an apparatus made in accordance with the patent, I think it is of very little importance. If it were shown that the defects which this apparatus is designed to remedy, or does remedy, were defects which had been felt, and the knowledge of which had come to the public so that there was a demand for a new apparatus which did not possess those defects, and if it were shown that that demand had lasted for a considerable time, so that men's minds were likely to have been engaged upon a mode of remedying those defects, and they were not remedied until the apparatus was devised for which the patent is taken out, no doubt that would have afforded considerable evidence that the adaptation or arrangement of the patentee was not obvious, inasmuch as you would then have a demand for some considerable time not met although known, and the fact that it was not met for a considerable time though known would indicate that the mode by which it was ultimately met could not have been so obvious as otherwise might have been supposed. Therefore, in a way, the demand for an improved article might become a very material circumstance. But it appears to me that the elements which would make it very material are altogether wanting in the present case. We have here no evidence that the defects, though they existed, seriously pressed upon those who used this apparatus, and that they had indicated a desire for a machine which was free from those defects. There is no evidence that men's minds had been applied to the removal of these defects, which in some

cases has been thought a very material circumstance. In the case which was before your Lordships' House of, Vickers v. Siddell, there was evidence that various devices had been adopted for the purpose of meeting a certain want. When, therefore, this want was met by the device of the patentee in that case, as it was, that was a strong circumstance to show that it occurred to skilled mechanicians whose minds had been directed to dealing with the subject. But nothing of that sort appears here. We have no history of the manner in which this invention came about.

"My Lords, no doubt it is perfectly true, as the learned counsel for the Appellant has said, that an invention which comes to a man by a happy flash of inspiration or without any prolonged experiment or thought maybe as good a subject-matter of a patent as one which has only been arrived at after long and difficult experiments. That I entirely agree with. But when we are coming to enquire into the question whether there really is an invention in any case, or whether it is merely such an adaptation as would be obvious to any one whose mind addressed itself to the subject, then the absence of any such evidence as I have indicated of either experiment or investigation or thought on the part of the patentee, or evidence that the mind of anybody else had been addressed to the subject, or that there had been attempts to remedy the defects by other methods,—I say the absence of such evidence appears to me to justify one in resting upon the opinion which one has formed that there is in this case no invention at all. I quite agree that it is always easy to say a thing is obvious when it has been pointed out. I fully feel the force of that argument and the danger of hastily arriving at such a conclusion; and, as I have said, if I saw that although the minds of mechanicians has been directed to meeting a certain want,

and various methods of doing so had been devised, those mechanicians had not arrived at the simple and the efficient one at which the patentee had arrived, I should be disposed to put aside my own view of the obviousness of the so-called invention and to come to the conclusion, notwithstanding my own impression on the subject, that those facts indicated that it was not so obvious as I myself should have thought. But in this case nothing of that sort is really to be found in the evidence, and therefore it appears to me that no more is shown than an adaptation of the well-known idea of utilizing a row of hooks attached to or forming part of a band of metal by applying them as they are required, the adaptation in the particular case being in a well-known manner, for a well-known purpose, and not involving, as it appears to me, any invention which can support a patent."

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Supreme Court of the United States

OCTOBER TERM, 1930.

NO. 48.

AMERICAN FRUIT GROWERS, INC.,
Petitioner,

v.

BROGDEX COMPANY, Respondent.

Printed Copy of Completed Records from United States Department of Agriculture as Filed by Amici Curiae and Abstracted in the Appendix to Their Brief.

R. T. M. McCREADY,
W. B. MORTON,
GEORGE E. MIDDLETON,
Counsel for Petitioner.

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"If the patent in suit be supposed to cover a tagged oyster, the answer is that a tagged oyster is not a machine or a composition of matter, and it is not a manufacture. A spring chicken, with an identifying tag fastened to its leg, is closely analogous. If he so desired, any fisherman could attach an identifying tag to his fish. *But none of these natural products could be classed as manufactured articles, simply because of being tagged.*" (Italics ours.)

THE ARTICLE CLAIMS ARE INVALID UNDER THE DOCTRINE OF HOLLAND CO. VS. PERKINS GLUE CO., 277 U. S., 245.

There is another cogent reason why these article claims are invalid. The grower or packer who dissolves borax in his wash water is well aware of what he is doing. In the remote contingency that the process claims of this patent should be held valid, he can stop using borax. But what of the fruit broker, the commission merchant, the fruit vender—what is his position should the *article* claims be held valid? The article claims are invalid under the doctrine of the Perkins glue case.

A typical article claim of the patent in suit may be compared with a typical Perkins claim as follows:

"28. A glue comprising cassava carbohydrate rendered semi-fluid by digestion and having substantially the properties of animal glue."

"24. Fresh fruit of which the rind or skin carries borax in amount that is very small but sufficient to render the fruit resistant to blue mold decay."

All of the four claims, 23, 24, 25 and 26, here in issue, conclude with the words "very small but sufficient to render the fruit resistant to blue mold decay" which are to be contrasted with the words of the Perkins claim "having substantially the properties of animal glue."

The public and general interests in the question of validity of these article claims transcends that appearing upon the surface of this case. This appears from the opinion of his Honor Judge Dickinson in the District Court for the Eastern District of Pennsylvania in Brogdex Co. vs. California Fruit Growers Exchange (unreported—copy of opinion printed in Appendix hereto) wherein an application was made for a preliminary injunction under the product claims against a defendant that was not alleged to have infringed the process claims. As to the possible invalidating effect of the Perkins Glue decision upon the product claims Judge Dickinson says as follows:

> "The question of how much borax is evidenced of the pirating of plaintiff's process cannot be determined from the claims of the patent in suit. The defendant asserts that it is prepared to prove that there is taken up in the growth of the fruit ingredients in the soil or in the water with which irrigated or from the insecticide sprays in use a quantity of borax which may not only be detected and found in the rind of the natural fruit but exceeding in quantity a minimum percentage of borax prescribed by the patented process; that the mere presence of borax is in consequence no evidence of infringement of this patent and the claims of the patent are those brought within the condemnation voiced in Holland Co. vs. Perkins Co., 277 U. S., 245."

To guard the public against this difficulty this court has invariably stressed the claim and has even gone so far as to "hold that where a specification by ambiguity and a needless mutliplication of nebulous claims is calculated to deceive and mislead the public, the patent is void" (*Carlton* vs. *Bokee*, 17 Wall., 463).

It is submitted that claims 23, 24, 25 and 26 are invalid under the principle expressed in the conclusion of the headnote of the Perkins Glue decision as follows (p. 246):

"Held, that the claims are void as they do not describe the starch ingredient in terms of its own physical or chemical properties, or those of the product, but wholly in terms of the use or function of the product."

No difference is seen in principle between the expression "having substantially the properties of animal glue" of the Perkins claim and the expression "very small but sufficient to render the fruit resistant to blue mold decay" of the product claims here in issue.

We will now show that the reasoning of the Perkins Glue decision applies. The Perkins patent described the process of making the product but the Court held that its description of the product was "in terms of the use or function of the product itself."

"Perkins' second way of describing the starch ingredient of his product was in terms of the use or function of the product itself. The chosen starch ingredient was to possess such qualities that when combined with three parts of water and with alkali it would produce a product 'as good as animal glue' for veneering, or having the properties of animal glue, these properties being described in terms of its functions. The ingredient was thus described not in terms of its own physical characteristics or chemical properties or those of the product but wholly in terms of maner of use of the product. Any glue made of a starch base, whatever its composition, water absorptiveness or other properties, combined with three parts of water, as is animal glue used for veneering, and with alkali, which has substantially the properties of animal glue, or is as good as animal glue for use in the wood working trades, is claimed as Perkins' glue. * * * But an inventor may not describe a particular starch glue which will perform the function of animal glue and then claim all starch glues which have those functions or even all starch glues made with three parts of water and

alkali, since glues may be made with three part of water and alkali that do not have these products." See the Incandescent Lamp patent, 159 U. S., 465, 472.

After referring to the cases against functional machine patents the Perkins opinion continues (p. 257):

> "Respondent argues that this principle, applicable to machine patents, is inapplicable to a patent for the composition of water which is also a result of a process and concededly is patentable as such, but to attempt to broaden the product claims by describing the product exclusively in terms of its use or function is subject to the same vice as is to attempt to describe a patentable device or machine in terms of its function."

The objection raised to the Perkins product claims was thus repeatedly stated to be the description of the product "in terms of the use or function of the product itself" and to this objection it seems to make no difference whether the claim refers to "the properties of animal glue" or "resistant to blue mold decay."

The Perkins decision objection that "the ingredient was thus described not in terms of its own physical characteristics or chemical properties or those of the product, but wholly in terms of the manner of use of the product." This "ingredient" the opinion points out (p. 255) was described in the specification "by indicating the range of water absorptivity, or stated in another way the degeneration of the starch * * *."

By parity of reasoning the patent in suit should describe its borax ingredient and its amount in some way other than "in terms of the use or function" so that the public would be in a position to know whether fruit on the market was within or without the boundaries of the claim.

One complaint by the Perkins decision is as follows (p. 257): "One attempting to use or avoid the use of Perkins' discovery as is claimed and described functionally could do so only after elaborate experimentation" and reject as impracticable the suggestion of plaintiff that "the best and probably the only satisfactory test is to try it out on a large scale in a furniture or veneering glueing factory."

But how is the public to determine whether the borax content of the fruit is "very small but sufficient to render the fruit resistant to blue mold decay"? Apparently this would require the destruction of the fruit by testing its susceptibiliy to decay, but for how long and under what conditions is not stated and even if it proved to be non-susceptible to decay this would still leave undetermined whether the borax ingredient was "very small" as required by the claims.

Of course it is absurd to suppose that the public could possibly perform any such tests.

VI. CONCLUSION.

1. The citrus fruit industry reached its present state with reference to supplying the furthest markets with fresh, sound fruit, by reason of the practice of "careful handling," with which naturally went washing with cleansers, detergents and disinfectants, because the fruit came from the groves bearing variously, fly smut, dirt, scale, germs and spores.

2. Borax was one of the things used in this preliminary treatment of the fruit. This the Court found. The patent in suit recommends borax as a cleanser and detergent, as well as an antiseptic.

3. Borax long having been in common use as a preservative, in the manner of the claimed process, upon

other articles of food, the District Court found the patent inherently bad; but held that conclusion *barred* by what the Court saw as unsuccessful search for a preventive, or as the Court put it a "specific."

4. Here was error of law in using a suppposed search to create a doubt.

5. Also there was error of fact. Both Courts below ignored the fact that the plaintiff did not use its first grade of evidence, the testimony of its own qualified witnesses, on this subject. They ignored the fact that the plaintiff's publications negatived the idea of search. Also they ignored the fact that the testimony of Mr. Hart, leading expert for plaintiff negatived the idea of need and search. The Circuit Court of Appeals emphasized its misconception by citing on this subject, the work of thirteen named individuals, eleven of whom did not testify and were not referred to as engaged in such search. The twelfth of these exemplars of search was Mr. Hart who negatived the idea. The thirteenth, Skinner, did not testify concerning search.

6. The process in suit was disclosed in many prior patents. Neither Court discussed any of them or made any finding with respect to the showing of any of them, although one of them (Bishop patent) was carried so far that a company formed to utilize its process applied it to oranges for at least two years.

7. Prior use of borax on oranges to inhibit decay in eight other packing establishments appears fully in the evidence. Neither Court refers to the exhaustive evidence of these uses, except as may appear from the conclusion stated by both Courts that while prior use was shown, the purpose and the adequacy of the uses was not established with sufficient certainty. The evidence has been

reviewed here to show that these uses were such that the enforcement of the decree in this case would prevent their continuance.

8. Error in the other collateral assumptions,—need, notable utility and adoption, and failure of early trial of borax, appears in the review of the evidence for like reasons as in the case of alleged search.

9. Natural adoption of this borax use on oranges, by way of Department of Agriculture Demonstration in 1905, is shown, with ample support for the conclusion that adding a borax coating to oranges was not advised early because inconsistent with anti-preserving activities of the Department, and against the sentiment of the day, and also because inconsistent with the Department's persistent teaching that "careful handling" was the logical and sufficient solution of the blue mold problem.

10. There is nothing revolutionary in the plaintiff's showing with respect to the use of the claimed process. Careful handling remains fundamental, and according to the most studied testimony for the plaintiff, entirely adequate.

11. In general it is enough to say that even if it is new to extend to oranges the application of borax for the inhibiting of mold, such process is not patentable, being merely the extension of an old process to a new subject in the same field.

12. The article claims have no support in law or reason.

This Honorable Court in fact in the case of Seabury vs. Am Ende, 152 U. S., 561, has answered everything that can be said in favor of the patent here in suit. The decision of 1894 in that case recognized that

the use of boracic acid as an antiseptic was common property, not to be the subject of patent unless accompanied by novelty of method or made an element of a novel composition.

The respective rights of the parties in the Am Ende case were set forth as follows:

> "All that is described in the prior publications the defendant may use with perfect immunity. They may use 'lint steeped in a hot saturated solution of boracic acid,' or 'wadding saturated with a certain quantity of glycerine,' or boracic acid dissolved in glycerine; but they should not be permitted to use cotton combined with a solution of boracic acid and glycerine in the manner described in the specification, for that belongs to Am Ende."

Therefore, we respectfully submit that the decision of the Circuit Court of Appeals is wrong and should be reversed.

Respectfully submitted,

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